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THE PENNSYLVANIA CANAL

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THE construction of the Pennsylvania Canal at the present time by the Commonwealth of Pennsylvania with its population of 11,200,000 would be considered a *great* project. However, when it is realized that the canal was begun 134 years ago, when the population was only 1,200,000,[1] it becomes evident that it was a *tremendous* undertaking, considering the men, money and material available at that time. The purpose of this paper is to tell the story of the canal from its inception to its sale or final abandonment without going into exhaustive details, for many books would be required to tell the complete history.

In 1826 the Legislature of Pennsylvania passed an Act, signed by Governor Andrew Shulze on February 25, that provided for "the commencement of a canal to be constructed at the expense of the state and to be styled 'The Pennsylvania Canal'." From earlier discussions in the Legislature this canal was to be "a navigable communication between the eastern and western waters of the state

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This article is comprehensive in that it gives a picture of the main line of the Canal and its laterals. It is felt that it will be helpful to anyone seeking data on any part of the Canal as it contains names of the engineers and other facts, figures and drawings not easily found nor previously printed or assembled.—Ed.

1 Population of Pennsylvania. U. S. Census, 1820, 1,049,458; 1830, 1,348,233.

and Lake Erie." In other words, from Philadelphia to Pittsburgh, and from Pittsburgh to Lake Erie.

The events that led to the passage of this Act, and the construction of almost 1000 miles of canals and railroads following the passage of this Act will be discussed in this paper. These events cover the period from 1826 to 1858, or roughly to the Civil War. It is well to remember that in 1826 Pennsylvania had only dirt roads with a few turnpikes, had had little experience in canal construction, and the steam locomotive and railroad had not yet been developed.

Before beginning the discussion of the canal it would be helpful to consider the topography and rivers of Pennsylvania to see what difficulties lay in the path of the canal. The outstanding physical feature of the state is the Appalachian Mountain range which extends across the state from northeast to southwest. This range begins in Maine and extends to Alabama. One low pass cuts the mountains in New York, and through it flows the Mohawk River. There is no low pass through these mountains in Pennsylvania, and that means that every road, turnpike, canal, or railroad that crosses the state must climb the mountains.

The region west of the mountains, an area of about 16,000 square miles, or more than a third of the total area of the state, was early known as the Ohio Country, and is served by the Allegheny, Monongahela and Ohio Rivers. Pittsburgh, located at the intersection of these three rivers, is blessed with natural water transportation, and for this reason was probably selected as the western end of the Pennsylvania Canal.

The region east of these mountains is served by the Susquehanna, Schuylkill and Delaware Rivers. The Susquehanna River serves the largest region, an area of about 21,000 square miles or almost half the total area of the state. However, the Susquehanna River flows right through the state and into Chesapeake Bay past Baltimore, Maryland, thus by-passing Philadelphia. This topography led to an 80-year struggle between Philadelphia and Baltimore for the traffic and commerce of the Susquehanna River valley.

Two great outstanding engineering problems in the construction of a canal from Philadelphia to Pittsburgh are herein revealed. The lack of a pass through the Appalachian Mountains and the lack of a river between Harrisburg and Philadelphia. If there had been a pass through the mountains, say beyond Altoona, and if the Susque-

hanna River had emptied into the Delaware River, say at Philadelphia, the history of our transportation problems, and I might add, the history of our state might have been entirely different.

Why was the canal built? Certain forces were at work in our nation that demanded transportation. The greatest of these forces was the fast growing population. The United States first consisted of the 13 original Colonies which successfully waged the Revolutionary War from 1775 to 1781. In the treaty with England in 1783 we received all the land east of the Mississippi River except Florida. In 1789 George Washington became the first president, and in 1790 the first census was taken. In the next few decades the population of the United States grew rapidly from 3,929,214 in 1790 to 12,866,020 in 1830.

In the early days the people settled along the Atlantic coast. In later years they climbed the mountains and settled in Western Pennsylvania and beyond. By 1820, 2,200,000 people lived in the states west of Pennsylvania. If we include Western Pennsylvania and Virginia the population was about 2,600,000.[2] The big problem was how to trade with these people living west of the mountains, how to buy their goods and how to sell goods to them. The dirt roads with the Conestoga wagons were not sufficient to meet their needs; some better form of transportation must be found. Some of our far-sighted leaders like George Washington felt that unless these people in the west were tied to the people in the east by transportation and communication they would not feel that they were a part of the national government so recently set up in the east.

Pennsylvania at this time was slow to realize the opportunity of serving these people with transportation, probably due to the Quaker conservatism and the general apathy of the citizens. However, DeWitt Clinton, Governor of New York, saw this demand and planned a canal from Buffalo to Albany. Ground was broken for the Erie Canal on July 4th, 1817, at Rome, New York, and was completed and opened on November 4, 1825. The canal was 364 miles long and required 83 locks. It followed the Mohawk River and was carried through the Appalachian Mountains in the pass mentioned earlier.

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2 Avard L. Bishop, *The State Works of Pennsylvania* (New Haven, 1907), 151. Hereinafter cited as Bishop, *State Works*.

The Erie Canal was called "Clinton's Big Ditch" and "Clinton's Folly" by the skeptic, but the wiser men realized it was in fact a canal from the Atlantic Ocean to the Great Lakes which would provide transportation for the growing number of settlers in the west.

When DeWitt Clinton started work on the Erie Canal he had no engineers with experience in building canals. He therefore sent Canvas White, a promising young man, to England where White traveled 2000 miles along the canals, asking questions about locks, dams, boats, estimates of cost, and made many notes and sketches. James Geddes and Benjamin Wright were county judges and frontier surveyors, skilled in settling boundary disputes, and these men ran the first survey and line of levels across the state. Nathan S. Roberts had taught mathematics at an academy in New York state. All of these men developed into good engineers and helped Clinton design and build the Erie Canal.

When construction was nearly completed on the Erie Canal, the Legislature and the leading business men of Pennsylvania realized that the canal would attract trade of the growing west through the canal, down the Hudson River and into New York City, and that some plan or line of action was necessary to gain part of this trade. Philadelphia had been the leading city in the United States during colonial days. It was here that our national government was framed and set in motion. It was also the first city in the United States in commerce and industry. To lose this exalted position and fail to capture part of the western trade was a blow to the pride and dignity of Philadelphia and Pennsylvania.

An event of great importance had occurred south of Pennsylvania which threatened to divert more trade from Philadelphia. In 1805 a bill was introduced in Congress to build a substantial road from the east to the Ohio River. Work started at Baltimore and reached Cumberland, Maryland. Between 1811 and 1818 the road was extended to Wheeling, West Virginia, on the Ohio River. This was a hard surface road and was known as the National Road. It was later extended to San Francisco, and is today known as United States Route 40. Here was a road that reached the Ohio River and could serve the west, but the only means of transportation was the covered wagon and the stagecoach and this was not enough.

Another type of transportation originating in Baltimore threatened to capture part of the western trade. Here two bankers, Philip Thomas and George Brown, met at Brown's house on February 12,

1827 with 25 leading business men, and 16 days later, on February 28, 1827, organized the Baltimore and Ohio Railroad. The first stone was laid on July 4, 1828, and operation began on January 7, 1830. The line to Ellicott City, 13½ miles, was completed by May 24, 1830. This is the oldest railroad continuously operated by the same company, in the United States.

The three largest cities on the Atlantic seaboard in 1820 were New York City, Philadelphia and Baltimore. New York City grew rapidly following the opening of the Erie Canal. Baltimore grew rapidly from the trade of the National Road and the Baltimore and Ohio Railroad. It looked as if all trade with the expanding west would by-pass Pittsburgh and Philadelphia unless the state acted to gain a portion of this trade. With this background of history we will now see what Pennsylvania did to capture its share of this trade.

The Pennsylvania Legislature Passes the Three Canal Acts

The rivalry between New York City, Philadelphia and Baltimore for the trade from the west was reflected in the Pennsylvania Legislature when the Committee on Roads and Inland Navigation, on February 24, 1823 reported a bill entitled "An Act providing for the appointment of a board of commissioners for the purpose of promoting the internal improvements of the state." After considerable discussion this Act was signed by Governor Shulze on March 27, 1824. This was the first Canal Act.[3]

The Governor appointed three commissioners, Jacob Holgate of Philadelphia, James Clark of Westmoreland and Charles Treziyulney of Center County. They had no data to start with, and had to take to the field to collect information. They began a survey between Harrisburg and Pittsburgh on May 24 and by December 6, 1824 had surveyed and run levels over 480 miles. They surveyed three routes but expressed a preference for the middle route which followed the Juniata River.[4]

Philadelphia had much at stake and formed "The Pennsylvania Society for the Promotion of Internal Improvements in the Commonwealth." Their plan of action was twofold. First, to prepare and distribute letters and pamphlets on the need for the canal, and

3 William Bender Wilson, *History of the Pennsylvania Railroad* (1895), Vol. 1, 96. Hereinafter cited as Wilson, *History*. Hubertis M. Cummings, *Pennsylvania Board of Canal Commissioners Records* (Harrisburg, 1959), I. Hereinafter cited as Cummings, *Pennsylvania Board*. Bishop, *State Works*, 171-172.

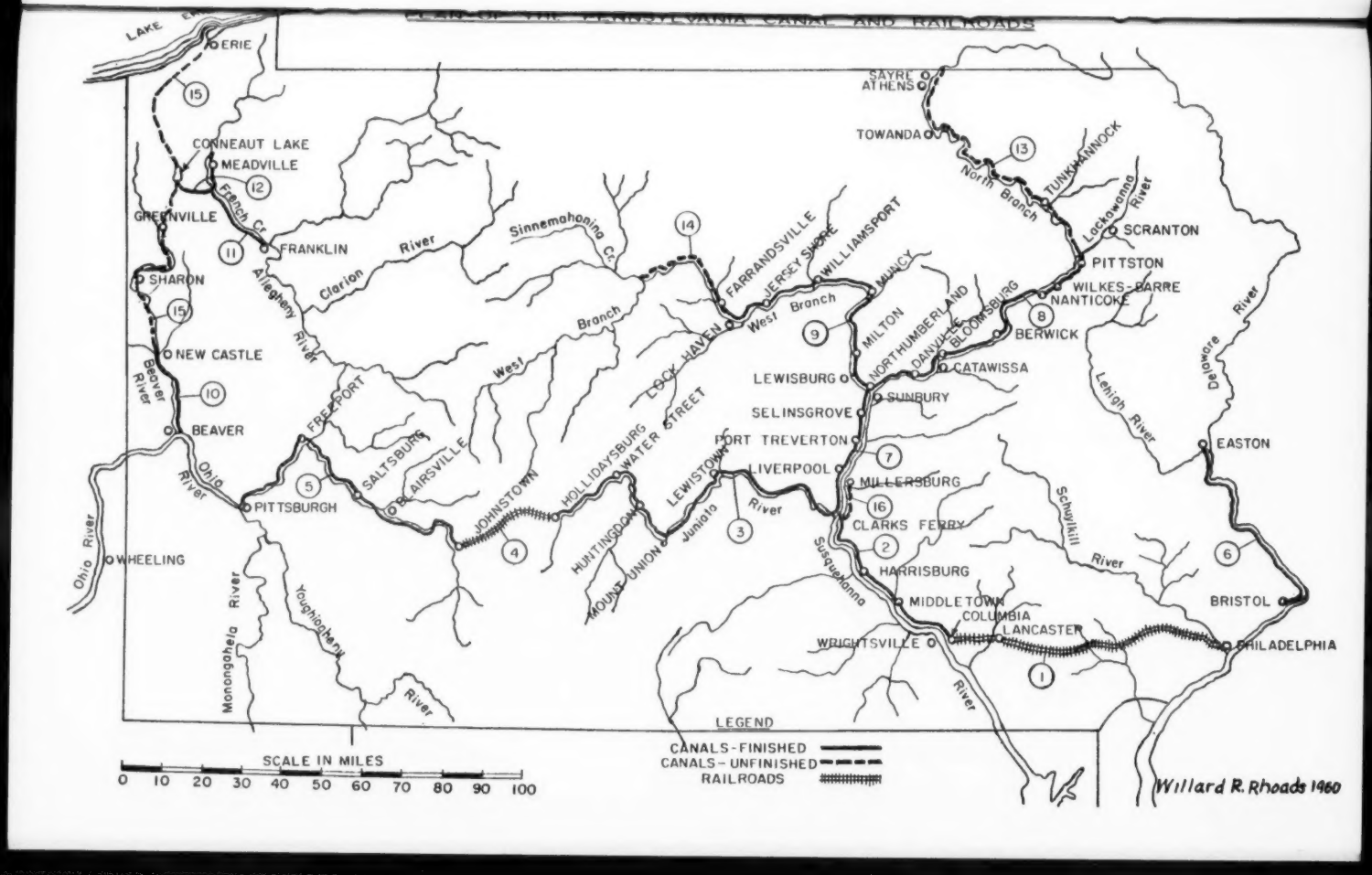
4 Wilson, *History*, 96.

TABLE No. 1

The Pennsylvania Canal and Railroads
Showing Length, Lockage and Locks

Number. See Opposite Page	Name	Length Miles	Lockage Feet	Locks No.
	Main Line			
1	Columbia and Philadelphia Railroad	81.6	—	—
2	Eastern Division	44.5	95.0	17
3	Juniata Division	127.5	576.0	91
4	Portage Railroad	36.69	—	—
5	Western Division	104.25	471.0	66
	Total Main Line	394.54	1142.0	174
	Lateral Lines			
6	Delaware Division	59.75	164.0	23
7	Susquehanna Division	39.0	86.5	12
8	North Branch Division	72.5	69.0	7
9	West Branch Division	73.0	138.5	19
10	Beaver Division	30.75	132.0	17
11	French Creek (Franklin) Division	22.25	128.5	18
12	French Creek Feeder	27.0	—	—
	Total Lateral Lines	324.25	718.5	96
	Total Finished Lines	718.79	1860.5	270
	Unfinished Lines (by the State)			
13	North Branch Extension	90.0	189.5	23
14	West Branch Extension	33.0	150.0	17
15	Erie Extension			
	Shenango Canal	60.0	287.5	44
	Conneaut Canal	45.5	510.0	71
16	Wiconisco Canal	12.25	35.0	6
	Total Unfinished Lines by the State	240.75	1172.0	161
	Total Lines begun by the State	959.54	3032.5	431

Notes:—Above data from Tanner, Bishop and *Reports of Canal Commissioners.* (See Bibliography.) For length of finished lines in above table see *Annual Report of Canal Commissioners,* 1840, p 5. Feeder Canals, other than French Creek Feeder, are not included in the above table.


LAKE ERIE
ERIE
15
CONNEAUT LAKE
MEADVILLE
12
French Cr.
GREENVILLE
FRANKLIN
11
Allegheny River
Clarion River
SHARON
15
NEW CASTLE
Beaver River
10
BEAVER
Ohio River
PITTSBURGH
5
FREEPORT
SALTSBURG
BLAIRSVILLE
JOHNSTOWN
4
Sinnemahoning Cr.
14
West Branch
LOCK HAVEN
HOLLIDAYSBURG
WATER STREET
HUNTINGDON
MOUNT UNION
Juniata River
3
LEWISTOWN
FARRANDSVILLE
JERSEY SHORE
WILLIAMSPORT
MUNCY
9
MILTON
NORTHUMBERLAND
DANVILLE
BLOOMSBURG
LEWISBURG
SUNBURY
SELINSGROVE
PORT TREVERTON
LIVERPOOL
7
MILLERSBURG
16
CLARKS FERRY
2
HARRISBURG
Susquehanna River
MIDDLETOWN
COLUMBIA
LANCASTER
WRIGHTSVILLE
1
PHILADELPHIA
SAYRE
ATHENS
TOWANDA
13
North Branch
TUNKHANNOCK
Lackawanna River
SCRANTON
PITTSTON
WILKES-BARRE
NANTICOKE
8
BERWICK
CATAWISSA
Lehigh River
Delaware River
EASTON
Schuylkill River
6
BRISTOL
Ohio River
WHEELING
Monongahela River
Youghiogheny River
LEGEND
CANALS-FINISHED
CANALS-UNFINISHED
RAILROADS
SCALE IN MILES
0 10 20 30 40 50 60 70 80 90 100
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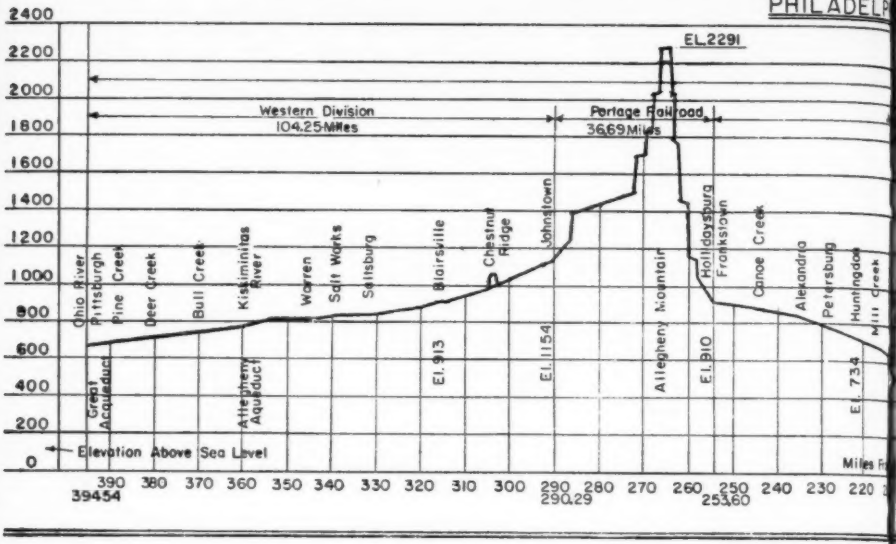
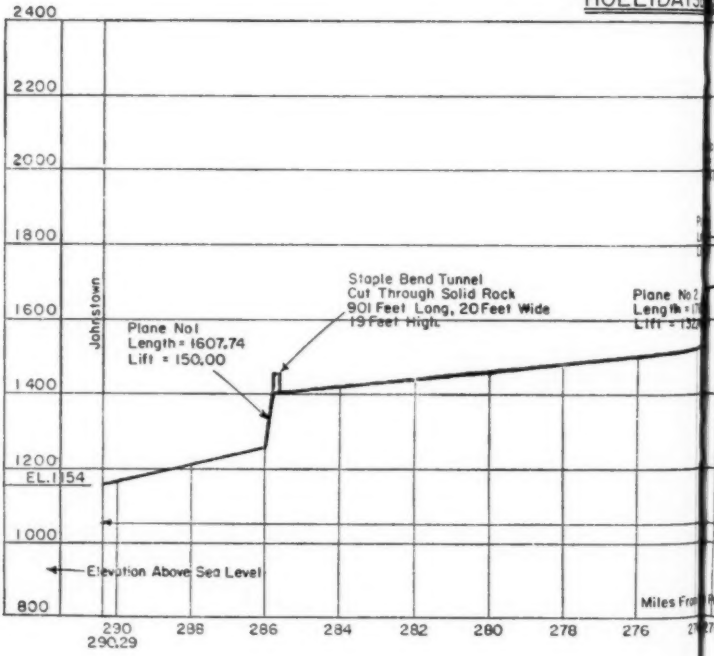
PROFILE—MAIN LINE OF THE ...VAN...
PHILADELP...ITTS...

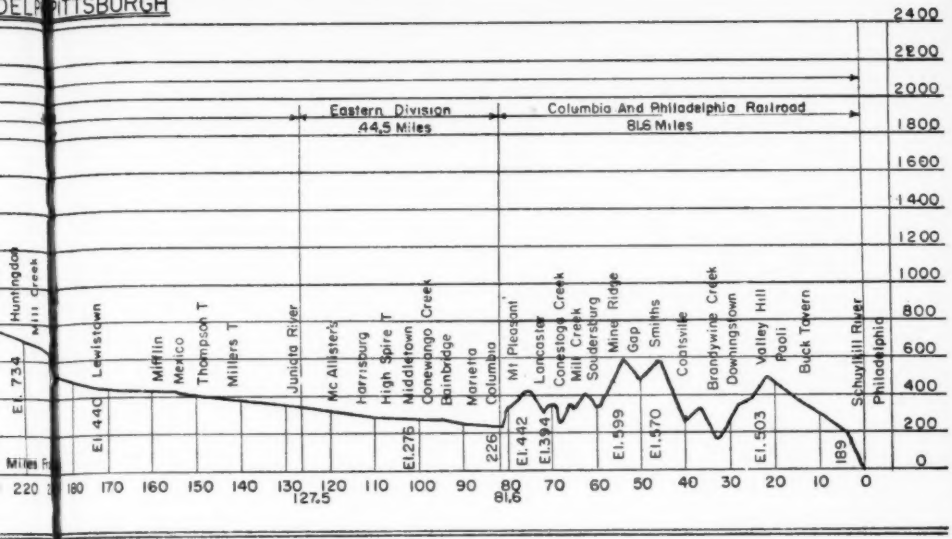


PROFILE OF TAGE ...
HOLLIDAYS...JOHNS...



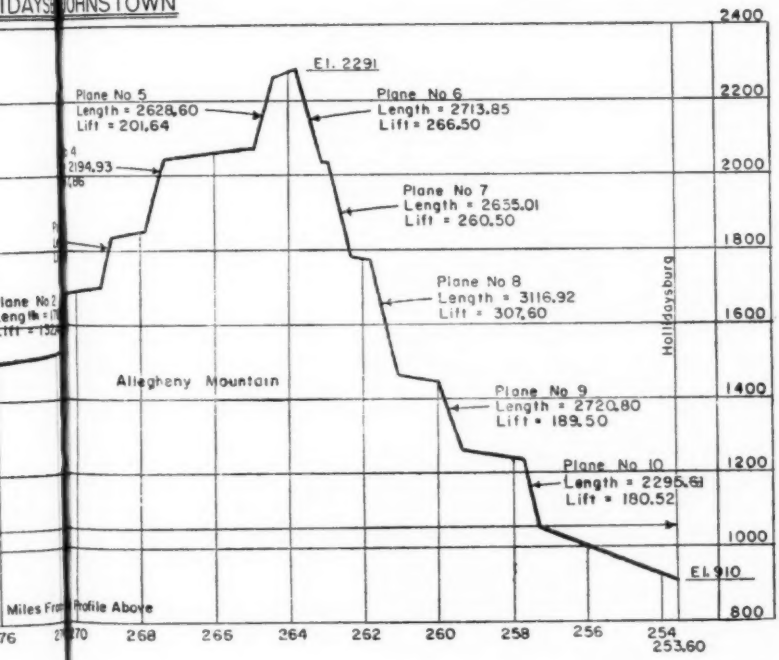
THE VANIA CANAL AND RAILROADS

DELP ITTSBURGH



OF TAGE RAILROAD

IDAYSB OHNSTOWN



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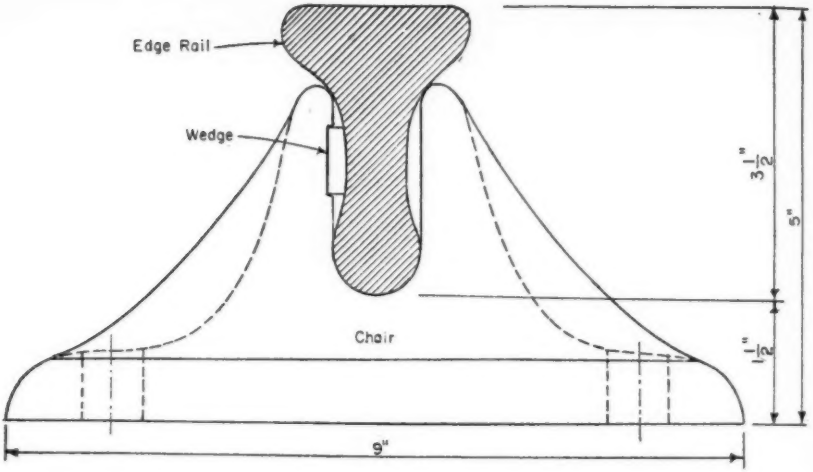
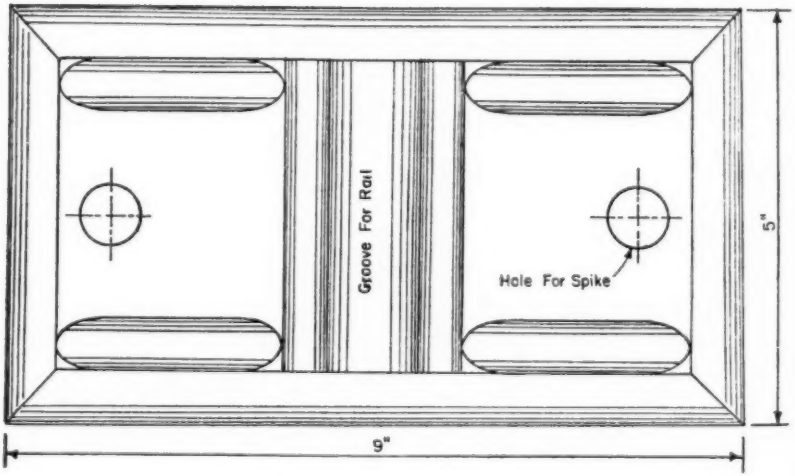
TYPE OF RAIL USED ON THE PORTAGE RAILROAD



SECTION OF RAIL
ELEVATION OF CHAIR



PLAN OF CHAIR

NOTE - DIMENSIONS TAKEN FROM ACTUAL RAILS IN THE HISTORICAL SOCIETY OF WESTERN PENNSYLVANIA PITTSBURGH, PENNA.

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thus mould public opinion and urge the Legislature to act. Second, to study the Erie Canal and the canals in Europe, to gain the necessary technical knowledge to build the canal. For this purpose they sent William Strickland, engineer and architect of Philadelphia, to Europe to study the canals. He returned with many ideas, sketches and drawings. His book of drawings covering the canal was highly respected and has been preserved to the present day.

The Pennsylvania Society then prepared a "Memorial" embodying the advantages of the canal which was sent to every newspaper and every county where it was widely discussed in school houses and public places. This led to a Bill in the Senate on February 28, 1825, entitled, "An Act to appoint a Board of Canal Commissioners," which was signed by Governor Shulze on April 11, 1825. This was the second Canal Act.[5]

To bring pressure on the Governor and the Legislature to begin the construction of the canal, the Pennsylvania Society promoted the idea of a Convention at Harrisburg, attended by representatives of every county in the State. All counties but two responded. The Harrisburg Convention was held August 4 to 6, 1825, and was attended by 123 delegates of whom 94 voted for the canal and 29 voted against it.[6] The Harrisburg Convention, after heated discussions for and against the canal, led to the introduction of a Bill on January 16, 1826, "An Act to provide for the commencement of a canal, to be constructed at the expense of the State, and to be styled 'The Pennsylvania Canal'," as outlined in the opening paragraphs of this paper. This was the third Canal Act, and was signed by Governor Shulze February 25, 1826. The Governor appointed a Canal Board of five men, and ordered work started at both the Harrisburg and Pittsburgh ends.[7] Construction of the Pennsylvania Canal was officially begun on July 4, 1826, when Governor Shulze turned the first spadeful of earth just east of the Capitol Building.

General Location of the Canals

Before describing the construction of the canals it might be helpful to describe, briefly, the location and names of the various canals. In general there were two principal classifications, the Main Line Canal, and the Lateral Canals. The Main Line was the

5 Bishop, *State Works*, 174-176, 179; Cummings, *Pennsylvania Board*, 2; Wilson, *History*, 98.
6 Bishop, *State Works*, 265.
7 Wilson, *History*, 99; Cummings, *Pennsylvania Board*, 2; Bishop, *State Works*, 185.

line from Philadelphia to Pittsburgh and was divided into five divisions. The Columbia and Philadelphia Railroad constituted the first division and extended from Philadelphia to the Susquehanna River at Columbia (81.6 miles). The Eastern Division extended from Columbia to Clarks Ferry along the Susquehanna River (44.5 miles). The Juniata Division extended from Clarks Ferry to Hollidaysburg along the Juniata River (127.5 miles). The Portage Railroad regarded as a division crossed the Allegheny Mountains from Hollidaysburg on the east slope, to Johnstown on the west slope (36.69 miles). The Western Division extended from Johnstown to Pittsburgh (104.25 miles). Total length of the Main Line from Philadelphia to Pittsburgh was 394.54 miles, which included 118.29 miles of railroad and 276.25 miles of canal.[8]

You may object and say this was supposed to be a canal from Philadelphia to Pittsburgh. True, but recall the two great obstacles pointed out at the beginning of this paper. There was no river to follow between Philadelphia and the Susquehanna River and there was no alternative but to build a railroad. In the western part of the state the Allegheny Mountains rose almost 1400 feet between Hollidaysburg and Johnstown and here again a railroad was necessary.

The Lateral Canals extended along the various rivers of the state and were divided into seven divisions. The Delaware Division extended from Bristol to Easton along the Delaware River (59.75 miles). The Susquehanna Division extended from Clarks Ferry to Northumberland along the Susquehanna River (39 miles). The North Branch Division extended from Northumberland to Lackawanna Creek along the Susquehanna River (72.5 miles). The West Branch Division extended from Northumberland to Farrandsville (10 miles west of Lock Haven) along the West Branch (73 miles). The Beaver Division extended from Beaver to five miles above New Castle along the Beaver River (30.75 miles). The Franklin Division extended from Meadville to Franklin along French Creek (22.25 miles). The French Creek Feeder extended from Lake Conneaut to Meadville (27 miles). The total length of the Lateral Canals was 324.25 miles. The total length of the Main Line and the Laterals was 718.79 miles. These lines were completed and placed in operation by the Canal Board.[8]

8 See Table No. 1, page 208.

In addition to the Main Line and the Lateral Canals other canals were started but not completed by the Canal Board. The North Branch Extension extended from Lackawanna Creek to the New York state line along the North Branch (90 miles). The West Branch Extension reached from Farrandsville to Sinnemahoning Creek along the West Branch (33 miles). The Erie Extension made up of two parts as follows: the Shenango Canal extended from New Castle to Lake Conneaut (60 miles) and the Conneaut Canal extended from Lake Conneaut to Lake Erie (45.5 miles). The Wiconisco Canal extended from Millersburg to Clarks Ferry along the Susquehanna River (12.25 miles). Total length of unfinished canals was 240.75 miles. As a rule these canals were sold to private canal companies who completed and operated them.

Construction of the Canal

The Act of February 25, 1826, gave the Governor authority to begin the construction of the Pennsylvania Canal. Governor Shulze therefore appointed a Canal Board of five men. He employed Nathan S. Roberts, who had worked on the Erie Canal, to locate the line between Pittsburgh and Freeport, at the mouth of the Kiskiminetas River, a length of 24 miles, and also appointed William Strickland to locate the line from Swatara Creek at Middletown, to the mouth of the Juniata River, or Clarks Ferry, a length of 22.5 miles.

The Act of February 25, 1826, provided for less than 50 miles of canal construction, and it was most imperative that more work should be started. Accordingly, on April 9, 1827, "An Act to provide for the further extension of the Pennsylvania Canal" was approved by the Governor. It required the Canal Board to locate and contract for the following sections: the Juniata Division—Clarks Ferry to Lewiston; the Western Division—Freeport to Blairsville; the Susquehanna Division—Clarks Ferry to Northumberland; the Delaware Division—Bristol to Easton (to spend $100,000); and to commence work on the French Creek Feeders. The Act also authorized the Board to make surveys of various lines, including the North Branch from Northumberland to the New York state line; the Erie line from Pittsburgh to Lake Erie; and the Columbia and Philadelphia Railroad.[9]

The Act of April 9, 1827, showed a complete change of policy

9 Bishop, *State Works*, 190-191.

by the Canal Board. In all previous discussions of the proposed canal it was the general understanding that the canal (with the railroads) was to extend primarily from Philadelphia to Pittsburgh. Yet the Act included 39 miles of canal from Clarks Ferry to Northumberland along the Susquehanna River, and also included a canal along the Delaware River.[10]

This was the beginning of a movement to build lateral canals along rivers that had not been included in earlier discussions. Lateral canals were originally planned to be built after the Main Line was in operation. The reason for including the lateral lines at this time was simple. In order to get approval for constructing the Main Line, the Canal Board had to agree to build lines in other parts of the state. It was logrolling in which certain members of the legislature refused to vote funds for the Main Line until a lateral canal was included within their own district. This did much to weaken the policy of the Canal Board during the following years. On the Erie Canal the main line was built first and they started to collect tolls, then added branches as needed. In Pennsylvania the Main Line and the branches were built at the same time and this method spread the work too thin. This was one of the basic weaknesses of the Pennsylvania Canal system, and was the cause of much of the financial difficulty encountered later.

The Annual Report of the Canal Board for December 1827 showed 162.5 miles of canal under contract, of which only 95.5 miles were for the Main Line. On March 24, 1828, another act was passed calling for further extension of improvements, namely—45 miles along each of the following rivers: Delaware, Conemaugh, Juniata and the North Branch of the Susquehanna; and ten miles from Middletown to Columbia. Construction of the Columbia and Philadelphia Railroad was also authorized.

The Annual Report of the Canal Board for 1828 notes that contracts had been let for 40.5 miles of roadbed for the Columbia and Philadelphia Railroad, and for 195.5 miles of canal. The canals included 23 miles along the west branch of the Susquehanna, 45 miles along the north branch of the Susquehanna, 35.5 miles along the Delaware, 10.5 miles of the French Creek feeder, 26.5 miles from Blairsville toward Johnstown along the Conemaugh, 45 miles along the Juniata and 10 miles between Middletown and Columbia.

10 *Ibid.*, 192.

This list included only 81.5 miles on the Main Line and 114 miles on the lateral lines.

On April 22, 1829, an act relative to the Pennsylvania Canal and the railroad was passed. It gave the Canal Board authority to enter into contracts for improvements along the Delaware and North Branch not yet started. It also directed that all work under progress should, if possible, be completed during the following year. The Canal Board Report of December 1830 noted that water had been admitted to 406 miles of canal and that 40.5 miles of the Columbia and Philadelphia Railroad were graded and ready for track laying. The Board also recommended that a railroad, in place of a macadam road, be used for the Allegheny Portage.

The Annual Report of the Canal Board for December 1831 shows that contracts were let for 155.75 miles of canals and feeders, of which only 50.25 miles were on the Main Line and 105.5 miles were for lateral canals.[11] During the next two years 75 miles of new canal and railroad work were called for.[12] In the December 1834 Report the canal commissioners stated that all lines of canal and railway authorized by law were completed. The length of the Main Line was 394.54 miles. When the canal was ready for use the state had undertaken and completed 637 miles of public improvements. Between 1836 and 1842, 135 additional miles of work were completed and 162 more were started, bringing the total public improvements to 934 miles. After 1842 the only work was on the North Branch Extension and the New Portage Railroad.

Description of the Canal

A canal is an artificial waterway, dug parallel to a river or creek, and built above the level of the river, so that the canal will not be flooded after every rain. The canals could not operate during the winter season, and the water was therefore drained out of the canal around Thanksgiving to prevent ice from destroying the canal banks and locks. In the spring when the canal was opened water was admitted directly from the river or by means of feeder canals, generally built up a creek valley. The dimensions of the canal, with few exceptions, were 40 feet wide at the top, 28 feet wide at

11 *Report of Canal Commissioners*, 1831, 26, 32. Concise retrospect of Canals and Railroads, February 1824 to March 1831.

12 *Report of Canal Commissioners*, 1833, 3-7. Work put under contract, 1826 to 1833.

the bottom with a depth of four feet of water. These are the dimensions used on the Erie Canal and the canals in Ohio, and may have been the dimensions brought back from Europe by Canvas White. Each foot of an average canal required about five cubic yards of excavation. However, there were many high and low locations which changed this yardage. The excavated material was used to build a ten foot towpath on one side, and a canal bank or berm on the other side of the canal.

The water in the canal was roughly level between locks, and the topography and drop of the ground determined the location of the locks. When the level of the ground dropped, say from six to ten feet, locks were built to lower the canal boats, after which the canal would continue with a level surface to the next lock. In general the locks were 90 feet long and from 15 to 17 feet wide. Where stone was readily available the side walls were built of large stone. In other places the locks were built of earth, lined with stone and covered with wooden sheathing.

Earth-moving machinery was unknown at this time, and the canal was dug by hand, using pick and shovel, wheelbarrows, black powder, horse-pulled drag lines and dump wagons. Many laborers could be employed working side by side along the line, as mile after mile of canal was dug. The building material at this time was lumber and stone, since iron, steel and concrete were not in use when canal construction started. Stonemasons were in great demand and the few masonry structures that remain today bespeak their careful work.

The lack of engineers to select the various routes and design the various bridges, aqueducts, locks and canals, was one of the most pressing problems when the work started in Pennsylvania. The only engineering college in America at that time was the Military Academy at West Point, established in 1802, and the army needed all the graduates. Apart from West Point the American engineers had to learn the hard way. Fortunately the Erie Canal was completed shortly before work started on the Pennsylvania Canal, and some of the engineers came to Pennsylvania to work on the canal and help train our engineers. These included Canvas White, James Geddes, Benjamin Wright, Nathan S. Roberts and DeWitt Clinton, Jr., son of the New York Governor.

Some men had natural ability as engineers, but most men served as apprentices under older and more experienced men. As

work on the canal proceeded many of these men developed into trained engineers. Among them were J. Edgar Thompson, William Milnor Roberts, Moncure Robinson, Sylvester Welch, Charles T. Whippo, Robert Faries, James D. Harris, Edward F. Gay, William B. Foster, Jr., Hother Hage, Charles S. Schlatter, Solomon W. Roberts, William Strickland and others.

Among the more difficult problems to be solved by the engineers was the construction of the dams, bridges and aqueducts. Three dams were required in the Susquehanna River between Clarks Ferry and Wilkes-Barre. They were located at Clarks Ferry, Sunbury and Nanticoke. The dam at Clarks Ferry was needed to carry the canal boats across the Susquehanna River. It was 1998 feet long and 8.5 feet high above the bottom of the river. It consisted of strong timbers cribbed together, and was filled with well packed stones, covering a base of 30 feet. To prevent damage from floods, the stone was covered with large timbers 35 feet long. Today heavy concrete walls would be necessary to build such a dam.[13]

The Shamokin Dam, just below Sunbury, was necessary to carry the canal boats from the canal on the west side of the river to Sunbury on the east side of the river to load coal brought down from Shamokin, Mt. Carmel, Centralia, Ashland and other places. The loaded boats would then return to the canal on the west side of the river and continue on to market. The dam was 2783 feet long, extended 9.5 feet above the bottom of the river, and was built on the same pattern as the Clarks Ferry Dam. It was named the Shamokin Dam in honor of the Indian village of Shamokin that was once located on the present downtown site of Sunbury. The dam at Nanticoke carried the canal from the west side of the Susquehanna River to the east side. It crossed at this particular point to reach a large station for loading coal in the vicinity of Nanticoke. The dam was 700 feet long and rose 12 feet above the bottom of the river.

Two types of bridges were used by the Canal Board to cross the larger rivers, towpath bridges and aqueducts. A towpath bridge was used at Clarks Ferry to cross the Susquehanna River and at Northumberland to cross the West Branch. The first bridge built at Clarks Ferry just below Amity Hall, was a lattice-type wooden bridge constructed on stone foundations, while the second bridge

13 *Report of Canal Commissioners*, 1830. 15.

was of the type built by Theodore Burr, famous bridge builder. These bridges carried two roadways, one in each direction for vehicular traffic. Boats were pulled across the river on the down stream side of the bridge, from two towpaths, located one above the other. Mules pulled the canal boats to the point where the canal joined the slackwater created by the Clarks Ferry Dam. The mules were then unhitched and taken up an inclined walk to the towpath from where they pulled the boat across the river. The boat was in the river while the mules were on the towpath.

Large aqueducts were used to cross the Allegheny River, both at Freeport and at Pittsburgh. Here the entire canal was carried across the river in a timber channel, supported on stone foundations, and the mules walked on the bridge adjacent to the channel. Both the boat and the mules were on the bridge above the river. In addition to the larger structures described above, many more smaller structures were needed to enable the canal to function. These included dams, aqueducts, bridges, culverts, waste weirs, roads, fences, shops, toll-houses, lock-houses, and weigh scales.

Description of the Main Line

As stated earlier the Main Line of the Pennsylvania Canal consisted of five divisions. From east to west they were the Columbia and Philadelphia Railroad, the Eastern Division, the Juniata Division, the Portage Railroad and the Western Division.[14]

Since railroads were in their infancy at this time it is helpful to consider the work of John Stevens who lived in Hoboken, New Jersey. In 1811 he owned and operated a steam ferry between Hoboken and New York City. From his experience with his ferry he believed that steam could be applied to pull cars on a track, and if such an idea could be developed it would provide better transportation than canals. When DeWitt Clinton was working on the Erie Canal, Stevens wrote many letters to him claiming that railroads would serve New York state better than canals.

On February 6, 1815, Stevens obtained a charter from the state of New Jersey for a railroad from New Brunswick on the Raritan River to Trenton on the Delaware River. Later this became known as the Camden and Amboy Railroad. Camden was opposite Philadelphia and Amboy was opposite New York City, so this was in reality a railroad between Philadelphia and New York

14 See profile of Main Line and Portage Railroad, pages 210-211.

City. This was the first railroad chartered in the New World.[15]

On March 13, 1823, the Pennsylvania Legislature granted a charter to John Stevens for a railroad from Columbia to Philadelphia, and this was the first charter for a railroad ever issued in Pennsylvania. Stevens formed a stock company, of which Stephen Girard was a director, selected the location for the railroad and asked the Legislature for $5,000 to build an experimental mile of track. However, the venture was so new that no one had any faith in railroads, and he failed to get the railroad started.

The plan for a railroad was revived by an Act of the Legislature on March 24, 1828, when the Canal Board ordered a survey of the route Stevens had earlier selected from Columbia to Philadelphia. Major John Wilson of the U.S. Topographical Engineers, was selected to relocate the line. He reported that the route was not favorable for a canal, but was suitable for a railroad. He therefore ran the surveys and prepared plans for a railroad between Columbia and Philadelphia, 81.6 miles long. Construction work started in 1829, a single track was completed by April 16, 1834, and the second track was completed by October 1, 1834.[16]

Iron rails had not as yet been developed at this time, therefore the rails consisted of iron straps, three inches wide by one-half inch thick, fastened to wooden stringers, laid on crushed rock. The cars consisted of trucks drawn by horses, since the locomotive had not yet been perfected. Farmers along the route loaded their produce on a cart and hauled it on the track to Philadelphia with horses. They were merely following the custom used on the state-built turnpikes, where every shipper provided his own team and wagon. This practice led to a great deal of confusion and considerable profanity, and was finally corrected by the Canal Board.

The Eastern Division Canal extended along the east side of the Susquehanna River from Columbia to Clarks Ferry, and passed through Highspire, Steelton and Harrisburg. The route was selected and plans were prepared by William Strickland, assisted by Sylvester Welch, Edward F. Gay, F. W. Rawle and A. B. Warford.

Ground was broken for the entire Pennsylvania Canal at Harrisburg on July 4, 1826, and this also served as the ceremony for

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15 John Stevens (1749-1838), inventor and engineer, became known as the "Father of American Railroads." In 1870 his son Edwin founded the Stevens Institute of Technology at Hoboken, as a memorial to his famous father.

16 Wilson, *History*, 11-14.

beginning construction on the Eastern Division. However, on March 14, 1827, the "Penn Lock" cornerstone was laid on lock No. 6, at the foot of Walnut Street, with a colorful dedication. The ceremony was attended by the Governor, members of the Legislature, the burgess of Harrisburg with his town council, and a great concourse of people.

The Eastern Division was 44.5 miles long and contained 17 locks to overcome a difference in level or lockage of 95 feet. The outstanding structures on it were the dam and the towpath bridge across the Susquehanna River at Clarks Ferry as described earlier in this paper. All the work on this Division was completed by 1833.

The Juniata Division followed the Juniata River and the Frankstown Branch from Clarks Ferry to Hollidaysburg, a distance of 127.5 miles. It was the longest division on the Main Line. Many engineers worked on the plans and construction of this line. Canvas White made the preliminary survey in 1826. Other engineers included DeWitt Clinton, Jr., James Ferguson, Edward F. Gay, Robert Faries, and William E. Morris.

The canal passed through Mifflintown, Lewistown, Huntingdon, Water Street, Frankstown and on to a canal basin at Hollidaysburg. Most of these places were struggling villages when the canal passed through, but from the traffic of the canal they grew into thriving towns. In the Narrows, east of Lewistown, where the valley is narrow and the mountain side is covered with loose stones, the canal was built in the north edge of the Juniata River, with the river side of the canal protected by stone walls. The total drop in the line was 576 feet which required 91 locks. Work was begun in 1828 and was completed in 1833.

The Portage Railroad extended from Hollidaysburg to Johnstown, a distance of 36.69 miles, between which the Allegheny Mountains stood as a gigantic barrier. The rise from Hollidaysburg to the summit was 1398 feet in ten miles, and the drop from there to Johnstown was 1171 feet in 26 miles. Nowhere in the United States had canal engineers encountered such a difficult problem. Many surveys and studies were made by various engineers as to the best method of getting the canal boats over the mountain, before the Canal Board was finally satisfied with the plan and ordered construction to begin.[17]

17 *Ibid.*, 100-105.

The Blair County Historical Society in the Baker Mansion in Altoona, Penn-

In 1824 the first three Canal Commissioners, Holgate, Clark and Treziyulney suggested extending the canal up each side of the mountain by a series of locks, and near the top connect the two ends by a tunnel four miles long. So little was known about tunnels at this time that the Canal Board defined a tunnel as "a hole like a well dug horizontally under a hill or a mountain." Later plans called for a macadam road over the mountain, in which the cargo would be hauled by wagons from the canal basin at Hollidaysburg to the canal basin at Johnstown.

By 1830 the route and the method of crossing over the mountain had not yet been settled by the Canal Board, and the Legislature and the public were becoming impatient with the delay. The reason for this feeling was simple, no goods could be carried over the Main Line from Philadelphia to Pittsburgh if this section of 36 miles was not completed. The Act of March 17, 1830, required three competent engineers to make a thorough study of the line over the mountain. The Canal Board appointed Moncure Robinson, S. H. Long, a Lieutenant Colonel of the U.S. Army, and Major John Wilson to make the study. After making the field surveys they presented their report favoring a railroad, rather than a turnpike or macadam road.

Following this report Governor Wolf, on March 21, 1831, approved "An Act to continue the improvements of the State by canals and railroads." Among the provisions was one authorizing the Canal Board to construct a railroad over the mountain from Hollidaysburg to Johnstown. The work was placed under Sylvester Welch as principal engineer and Moncure Robinson as consulting engineer.

The plan adopted was a series of ten inclines, five on each side of the mountain. These planes were powered by steam engines which pulled a truck, on which a canal boat was loaded, up a track by means of huge ropes, at the same time that another truck was let down. At Hollidaysburg and at Johnstown the track extended into the water of the canal basin. A truck was run down into the water, the canal boat was floated above the truck, lashed to it and the entire load was drawn to the top of the incline. Here, in the canal's early stages, the load was pulled along a fairly level track, by means of mules, to the foot of the next incline.

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sylvania, holds pictures, models, relics and a large assortment of books and papers relating to the Portage Railroad.

This procedure was repeated five times to reach the summit, and on going down the mountain it was reversed, the steam engine dropping the load down the incline. By this method canal boats were carried from the canal basin at Hollidaysburg to the canal basin at Johnstown, from which they would continue their trip in the regular canal. These canal basins served much the same purpose as parking spaces serve the automobile today. Here the canal boats could be parked or held until they could be moved up the inclined planes. These basins were large; the one at Johnstown covered 8.5 acres.[18]

The iron rails used on the track on the inclines were manufactured in Wales, shipped to Philadelphia, and carried by canal boats to the Portage. The rails, known as "edge rails," had no base but were set in grooves in cast iron forms, with a base five inches by nine inches, called "chairs." These chairs were fastened by two spikes driven into wooden pegs in stone ties about 24 inches square by 18 inches thick, spaced about three feet apart along the rail. Considerable difficulty was experienced in the spring of the year, by the heaving of the stones, when the frost came out of the ground.[19]

Hemp ropes were used to hoist the canal boats up and down the inclines. These ropes varied from 3600 feet to 6600 feet in length, were up to seven inches in circumference, cost around $3,000 and lasted only an average of 16 months. Considerable difficulty was encountered when any of these ropes broke, as such a misfortune put the incline out of service.[20]

Work started on the Portage Railroad in May 1831 and the entire line was opened on March 18, 1834. Two improvements in operation were made later which were of great help. Wire ropes were substituted for hemp ropes on the inclines, and locomotives replaced mules in hauling the canal boats from plane to plane. Engineers who worked on the Portage Railroad included Sylvester Welch, Moncure Robinson, S. H. Long, Solomon W. Roberts, Edward Miller and W. Milnor Roberts.

In addition to the unique construction of the Portage Railroad itself, three additional rather unique structures were required:—the

18 The water for this canal basin and the canal was provided by a dam built about two miles above South Fork. During an eight inch rainfall the dam overflowed, washed out the bank and caused the Johnstown Flood of May 31, 1889.

19 See page 212 for sketch of rails.

20 Wilson, *History*, 109, 131.

Skew Arch Bridge, the Conemaugh Viaduct and the Staple Bend Tunnel, two of which are still standing.

The Skew Arch Bridge, erected in 1832, is located on the east slope of the mountain, at the foot of old Incline No. 6, between Hollidaysburg and Cresson. It is a stone arch bridge, built on a skew or oblique angle to allow the Portage Railroad to pass under the bridge, and to allow the Huntingdon, Cambria and Indiana Turnpike, now U.S. Route 22, to pass over the bridge. The stones were laid without mortar and the bridge is in excellent condition today, a tribute to the wonderful skill of the stonemasons during that era.

Nearby is a monument, ten feet high, built of stones taken from the Portage Railroad track, that carries four bronze tablets on each of its four faces, briefly describing the Portage Railroad. This monument was erected by the State of Pennsylvania as a Memorial to the old Portage Railroad. It was dedicated on October 1, 1929, during the term of John S. Fisher, Governor. At the head of Incline No. 6, on top of the mountain stands the Summit Mansion House, formerly known as the Lemon House, built by Mr. Lemon about 1830. This was the hotel where travelers on the Portage Railroad stopped for meals and lodging. Should you drive over U.S. 22 west of Hollidaysburg today you can see the Skew Arch Bridge, the State Monument and the Lemon House.

The Conemaugh Viaduct, designed by Solomon W. Roberts, was located eight miles east of Johnstown. It was a high stone masonry structure, 28 feet wide at the top with one semicircular arch that had a span of 80 feet and a height above the water of 70 feet. The Viaduct carried the canal boats over the Little Conemaugh River, and was later used by the Pennsylvania Railroad for their main line tracks. It was destroyed by the Johnstown Flood of May 31, 1889. This was another example of the excellent work done by the stonemasons during the construction of the canal system.

The third important structure on the Portage Railroad was a tunnel cut through solid rock, located four miles east of Johnstown, at a place called Staple Bend. The tunnel was 901 feet long, 20 feet wide and 19 feet high. For 150 feet at each end its arches were made of cut stone. The tunnel, built in 1834 by J. and E. Appleton at a cost of $37,500, was the first railroad tunnel built in the United States. It is still in a good state of preservation and would attract

tourists except for the fact that it is inaccessible on a rugged mountain side. Both ends of the tunnel can be seen from the Pennsylvania Railroad trains, when leaves are not on the trees.

Many famous people travelled over the Portage Railroad. Charles Dickens of England, while touring the United States in 1842, described his trip over the mountain in an article that is still in existence. Well known Americans, such as Henry Clay, Jenny Lind the singer, and Presidents William Henry Harrison and Zachary Taylor made the trip over the Portage Railroad. Joseph Ritner in 1835 travelled over the road on his way to Harrisburg as Governor-elect.

The Pennsylvania Railroad stated in an official history in 1875, "The Portage Railroad over the Allegheny Mountains was, during all the time it remained in operation, one of the wonders of America." This was eminently true.

The Western Division of the Main Line extended from the canal basin at Johnstown to Pittsburgh, a distance of 104.25 miles. The canal followed the Conemaugh, Kiskiminetas and Allegheny Rivers, and passed through Blairsville, Saltsburg and Freeport to Pittsburgh. Nathan S. Roberts was location engineer on this line, assisted by other experienced engineers, including James D. Harris of Bellefonte, Edward Miller, Alonzo Livermore, Sylvester Welch and William Milnor Roberts. Work began in 1826 and was completed in 1833.

The outstanding structures on this Division included an aqueduct crossing the Allegheny River at Freeport and another at Pittsburgh, as described earlier in this paper. There was a short tunnel west of Blairsville at Tunnelsville and another tunnel under Grant's Hill in Pittsburgh. Sixty-six locks were required to overcome a drop of 471 feet.

Description of the Lateral Lines

In addition to the Main Line from Philadelphia to Pittsburgh the Canal Board built five lateral canals, totaling 256.5 miles along the Delaware and Susquehanna Rivers in the eastern part of the state.

The Delaware Division Canal, 59.75 miles long, extended from Bristol to Easton, along the western side of the Delaware River. The main purpose of this canal was to carry coal from the Lehigh Coal and Navigation Company at Easton to Philadelphia and Balti-

more. Engineers who worked on this canal included Henry G. Sargent, John Hopkins, James B. Sargent and others. Work was started in 1827 and was completed in 1830. The lockage between the two towns was 164 feet which was overcome by 23 locks.[21]

The Susquehanna Division Canal extended 39 miles along the west bank of the Susquehanna River from Clarks Ferry to Northumberland, and passed through Liverpool, Port Treverton and Selinsgrove. Remains of the old canal can be seen at many points along the river, even to this day.

As early as 1826, John Bennett, surveyor from Luzerne County, ran a survey line from the New York State line to the Juniata River at Clarks Ferry, a distance of 161 miles with a drop of 343 feet. The engineers who designed and built the canal were Simeon Guilford, Hother Hage with a canal office at Liverpool, Francis W. Rawle and A. B. Warford. Work was begun in 1828 and was completed in 1831. The principal structures required on this division included the Shamokin Dam, as described earlier, and a towpath bridge across the North Branch at Northumberland. Twelve locks were required to overcome a drop of 86.5 feet.

The North Branch Division Canal extended along the Susquehanna River from Northumberland to the Lackawanna River above Pittston, a distance of 72.5 miles. The canal passed through Danville, opposite Catawissa, and through Rupert, Bloomsburg, Espy, Berwick, Nanticoke, Wilkes-Barre and Pittston. Charles T. Whippo located and designed the canal and was the first construction engineer. He was assisted by Matthew R. Stealey, William B. Foster, J. H. Petrie and John Bennett.

Ground was broken for the North Branch Canal at Berwick on July 4, 1828. People along the river from Northumberland to Wilkes-Barre gathered for the gala event. Water was admitted to the canal in November 1830, but it was not until September 27, 1831, that boats could pass over the entire length.

Seven locks were required to overcome a drop of 69 feet. In addition an outlet lock was required at Northumberland to lift the canal boats from the Shamokin Dam pool to the canal. The important structures needed in this division included a stone aqueduct at Rupert, a weigh scales at Beech Haven and a dam across the Susquehanna River at Nanticoke. Boat yards, where canal

21 In 1866 the Delaware Division was leased to the Lehigh Coal and Navigation Company.

boats were built or repaired, were located at Espy, Northumberland and Selinsgrove, while a few boats were built at Bloomsburg and Wilkes-Barre.[22]

The West Branch Canal extended along the West Branch of the Susquehanna River from Northumberland to Farrandsville (about ten miles west of Lock Haven), a distance of 73 miles. The canal passed opposite Lewisburg, and through Milton, Williamsport, Jersey Shore and Lock Haven. Lumber and lumber products comprised the principal shipments on this division.

Engineers who designed and worked on this canal were James D. Harris, principal engineer, Francis W. Rawle, Robert Faries and William E. Morris. The work was begun in 1828 and was completed in 1834. There was considerable drop in this division, 138.5 feet, which required 19 locks.[23]

The Wiconisco Canal extended from the mouth of the Wiconisco Creek in Millersburg, along the east side of the Susquehanna River, to the towpath bridge at Clarks Ferry, a distance of 12.25 miles. Evidence of the canal can still be seen along Route 14. The engineer in charge of this canal was Anthony B. Warford assisted by James Bradley. The canal required 6 locks to overcome a drop of 35 feet.

Work was placed under contract during August 1838, and was completed by a private company in 1845. By Act of the Legislature July 13, 1842, the Wiconisco Canal Company was incorporated to take over the entire works of the canal. The reason for building this canal was to carry coal from the terminal of the Lykens Valley Railroad in Millersburg, and deliver it to market. Here was a case where the Wiconisco Canal was taken from state ownership and placed under private control and operation.

Canals from Pittsburgh to Lake Erie

The second of the Canal Acts, mentioned earlier, which was passed April 11, 1825, called for "the establishment of a navigable communication between the eastern and western waters of the State and Lake Erie." In the preliminary discussion of the canal in

22 The North Branch Extension was begun in 1836 and was completed in 1856 when the first boat, *Towanda*, passed Pittston for Elmira with a cargo of coal. The canal enjoyed considerable business for a number of years, but was partially destroyed by floods in 1865, and never recovered.

23 By an Act of the Legislature on April 14, 1838, the Canal Board was directed to locate and put under construction, a canal from Farrandsville to Sinnemahoning Creek, a distance of 33 miles. The canal was never completed.

1824, it was considered desirable to connect Pittsburgh with Lake Erie to capture part of the traffic that would normally pass over the Erie Canal on to New York City, and divert it to Philadelphia. However, when the engineers began surveying the line to Erie they found it was necessary to carry the canal over very high ground.

Lake Conneaut, in Crawford County, was near the high point in the route. It was 419 feet above Beaver and 510 feet above Lake Erie. In other words, here was another obstacle, more than a third as high as the Portage Railroad over which the canal boats had to be transported by inclined planes. However, on this line the ground sloped very gradually, thus it was possible to carry the canal over the high ground by means of ordinary canal locks.

Lake Conneaut, near the top of the divide, had to furnish feeder water for the canal north to Lake Erie and south to New Castle. However, the lake did not contain enough water for this purpose. To this end the Canal Board, as early as 1826, authorized the construction of a feeder canal to supply additional water to the lake. This was known as the French Creek Feeder because the water was obtained from French Creek.

The canal from Pittsburgh to Lake Erie was divided into several divisions, as follows:—Pittsburgh to Beaver, Beaver to New Castle, New Castle to Erie, French Creek Feeder and the French Creek Division.

The Western Division of the Main Line of the Pennsylvania Canal ended at the Monongahela River in Pittsburgh. From here the canal boats could reach Beaver by using the Ohio River, and no artificial canal was required between these two points.

The Beaver Division extended along the Beaver River from the town of Beaver to a point six miles above New Castle, a distance of 30.75 miles. In this distance the canal had a drop of 132 feet which was overcome by 17 locks. This left an additional drop (or rise) of 287 feet between the upper end of the Beaver Division and Lake Conneaut. Charles T. Whippo, who had located the North Branch Division, was the location and construction engineer for this division, assisted by Matthew R. Stealey. Construction work began in 1831 and was completed in 1834.

The French Creek Feeder was a project to add more water to Lake Conneaut, so that the lake would have sufficient water for lockage on the Erie Extension Canal. In 1826 the Canal Board hired Major David B. Douglass, a West Point Military Academy

expert and professor of mathematics, who had designed the Croton Aqueduct for the New York City Board of Water Supply, to make an investigation and report on a canal feeder to supply more water to Conneaut Lake. His report of January 1, 1827, indicated that by building a canal eastward from Conneaut Lake to French Creek above Meadville, a distance of 27 miles, he could utilize a head of 13.5 feet of water, sufficient to divert 212 cubic feet of water per second into the lake which would raise the level of the water in the lake about eight feet.

French Creek Feeder was a navigable canal but had no locks. It began at the mill dam of Daniel Bemus, three miles above Meadville on French Creek, and extended to Conneaut Lake, a distance of 27 miles. Work was started on the feeder canal during August 1827 and was completed in 1834. The engineers who worked on the design and construction of the canal, after Major Douglass had presented his report, were William Milnor Roberts, Charles T. Whippo, James Ferguson and Sylvester Welch.

Closely associated with the French Creek Feeder was the French Creek Division Canal that extended south along French Creek from Meadville to Franklin, a distance of 22.25 miles. Part of this length was by canal and part by slack water navigation, using French Creek. The canal had 18 locks, necessary to overcome a drop of 128.5 feet. The canal was built at about the same time that the French Creek Feeder was constructed. It did not prove to be a paying investment, although the canal did help to develop the community by providing cheap and easy transportation.[24]

The Erie Extension Canal began at a point six miles north af New Castle and continued past Sharon and Greenville to Conneaut Lake, and from there extended on to the city of Erie on Lake Erie, a distance of 105.5 miles. For convenience this length was divided into two parts, the Shenango Division and the Conneaut Division. The Shenango Division extended from New Castle to Conneaut Lake, a distance of 60 miles. The lockage of 287.5 feet was overcome by 44 locks. The Conneaut Division extended from Conneaut Lake to the city of Erie, a distance of 45.5 miles. The lockage of 510 feet was overcome by 71 locks.

The engineers who worked on the canal included William Milnor

24 Walter T. McClintock, "The French Creek Feeder and Conneaut Reservoir, 1827-1872." *The Western Pennsylvania Historical Magazine*, 22 (September 1939), 188-200.

Roberts and Charles T. Whippo. Major Douglass of West Point had made a study of the line from Conneaut Lake to Erie in connection with his study of the French Creek Feeder. Many difficulties were encountered on the Erie Extension. The cost greatly exceeded the estimate and progress was slow. Finally on March 7, 1843, the Legislature incorporated the Erie Canal Company, a stock company, to take over the Erie Extension.

At this time the canal from Conneaut Lake to Erie was not completed and Governor Porter asked the Erie Canal Company to complete the work, at which time the Beaver and French Creek Divisions would be turned over to them. This seemed reasonable, since part of a canal between Pittsburgh and Erie would be of little value to a private company; they would need the entire line.

The first boats to reach Erie through the canal were the *Queen of the West,* a packet boat loaded with passengers, and the *R. S. Reed,* loaded with coal from Mercer, on December 5, 1844. Considering this use of the canal as evidence of completion, Governor Porter turned over the Erie Extension, Beaver Division and the French Creek Division to the Erie Canal Company on January 10, 1845.

By this action the entire canal system from Pittsburgh to Erie was removed from state ownership and placed under private control and operation. In 1870 the Erie Canal Company was declared bankrupt and was sold to the Erie and Pittsburgh Railroad Company. The canal was abandoned in 1871, thus bringing to an end the dream of connecting Philadelphia with Erie by canals.

The New Portage Railroad

The inclined planes on the Portage Railroad were never satisfactory, either as to operation or safety. It required 33 changes of power to carry one canal boat over the mountain from Hollidaysburg to Johnstown, 12 stationary engines, 12 teams of horses or mules, 9 locomotives, and a minimum of 54 men.[25] Shortly after the Portage Railroad was opened suggestions were made as to how the planes could be avoided. On September 28, 1836, the Canal Board directed Charles DeHaas, as principal engineer, to make a study and report on the feasibility of selecting a line that would replace the planes with a continuous railroad. DeHaas selected such a route but the idea was dropped.

25 Wilson, *History,* 131.

On May 10, 1850, the Legislature passed an Act looking to the construction of a railroad to avoid the planes, and the Canal Board selected Robert Faries, as principal engineer, to make the survey. His report was adopted, work was started and by January 1, 1853, planes Nos. 1, 2 and 3 on the Johnstown side of the mountain were avoided.

Considerable opposition developed against the Robert Faries plan of removing the inclined planes, and the Legislature on May 4, 1852, provided for a Board of Engineers to check the Faries plan. William Milnor Roberts and Edward F. Gay were selected to work with Mr. Faries. The two engineers agreed with the Faries plan, which increased the length of the Portage Railroad from its original 36 to 45 miles—18 miles from Hollidaysburg to the summit, an increase of 8 miles, and 27 miles from the summit to Johnstown, an increase of one mile.

Work was begun on the avoidance of planes Nos. 4 to 10, and by July 1, 1855, the work was completed and the New Portage Railroad was opened, at which time travel over the old Portage Railroad ended. The New Portage Railroad included the Mule Shoe Curve, and part of this road can be seen from the Pennsylvania Railroad trains.[26]

The work of building the New Portage line was practically lost because the Main Line of the Pennsylvania Canal, including the New Portage Railroad, was sold to the Pennsylvania Railroad. The railroad took possession of the property on August 1, 1857, and operated the New Portage for three months at a loss, and then used the Horse Shoe Curve to reach the top of the mountain. During 1858 the Pennsylvania Railroad removed most of the rails from the New Portage Railroad and used them to extend the Pittsburgh, Fort Wayne and Chicago Railroad from Plymouth, Indiana, to Chicago.

Operation of the Pennsylvania Canal System

In 1834 the entire Pennsylvania Main Line Canal and the Lateral Branches were in operation and producing revenue. Three years later the entire country experienced the Panic of 1837. This panic was probably brought about by the over-expansion of public works, such as roads, turnpikes, canals and railroads, and by the unsound methods of financing some of them.

Business slowed down, canal tolls dropped, and the Canal Board

26 *Ibid.*, 137.

had difficulty in meeting the interest on the loans borrowed to build the canal. This condition continued from 1839 to 1844.[27] Various attempts were made to raise money by state taxation to meet the crisis, but such tax laws were seldom fully enforced. Finally on April 29, 1844, an act was passed by the Legislature for a real tax law. This law called for taxes on real estate, personal property, mortgages, bank stock, and all salaries from professions, trades and occupations except farming. The response was good and by 1845 business had returned to normal and interest payments on canal loans were resumed.

On the same date, April 29, 1844, an Act was passed to dispose of the Main Line Canal from Philadelphia to Pittsburgh for $20,000,000. No bids were received for this offer, probably because the price was too high. On October 8, 1844, a state-wide vote showed 149,748 in favor of selling and 124,598 opposed to selling the Main Line Canal. No further effort was made to sell the canal during the next ten years.[28]

There were certain weaknesses inherent in the operation of the canal. The canal had to close down during the winter season, say from Thanksgiving to April first, spring freshets would sometimes wash out part of the canal banks, high floods might submerge the canal, and the Portage Railroad, with its ten inclines, was slow and expensive. A new movement grew out of this situation. The business interests of Philadelphia felt that an all-weather railroad across Pennsylvania was needed to capture the trade of the west. Accordingly on April 13, 1846, an act was passed by the Legislature to incorporate the Pennsylvania Railroad from Philadelphia to Pittsburgh.

A surprising situation developed at this time. The Baltimore and Ohio Railroad, which by this time had extended its railroad from Baltimore to Cumberland, Maryland, asked the Pennsylvania Legislature for a charter to extend their road through Pennsylvania to Pittsburgh. A temporary charter was granted to the Baltimore and Ohio Railroad on April 21, 1846, with the following conditions:— if the Pennsylvania Railroad had a bona fide stock issue of $3,000,000 of which ten per cent was actually paid in; and if the Pennsyl-

27 For two years the State paid the interest on the debt with paper money. On February 1, 1840 Pennsylvania defaulted in the payment of interest on the public debt.

28 Bishop, *State Works*, 250.

vania Railroad placed under contract 30 miles of track before July 30, 1847, they would get the charter, and the Act granting the Baltimore and Ohio Railroad a charter would be null and void.[29]

The Pennsylvania Railroad met these conditions and was granted a charter on February 25, 1847. Following the grant they pushed the construction of the new railroad with vigor and determination. Work started at both ends, and the first train from Philadelphia reached Pittsburgh on December 10, 1852, using the Columbia and Philadelphia Railroad and the Portage Railroad.

Sale of the Pennsylvania Canal

With the railroad now in competition with the canal, the Legislature again tried to sell the Main Line Canal. By an Act of April 27, 1854, they offered to sell the Main Line from Philadelphia to Pittsburgh reducing the price from $20,000,000 to $10,000,000. Again there were no buyers. A year later the Legislature passed the Act of May 8, 1855, offering to sell the Main Line for $7,500,000. On December 20, 1855, J. Edgar Thompson, President of the Pennsylvania Railroad, offered to pay $7,500,000 for the Main Line, and the line was officially purchased at a public auction held on June 25, 1857, at the Merchants Exchange in Philadelphia. The railroad took possession of the property on August 1, 1857.[30]

After the sale of the Main Line the state was anxious to dispose of the lateral lines. On February 25, 1858, a bill was prepared which provided for the sale of all transportation improvements still owned by the state, as well as for the completion of the Sunbury and Erie Railroad. This road had been chartered April 3, 1837, but little work had been done on it in the meantime. The Bill of 1858, therefore, called for the completion of the railroad as well as for the sale of the lateral lines. The purpose of the bill was this: If the trade from Lake Erie could not be captured by the Pennsylvania Canal the state would try to acquire some by a railroad built to Lake Erie.

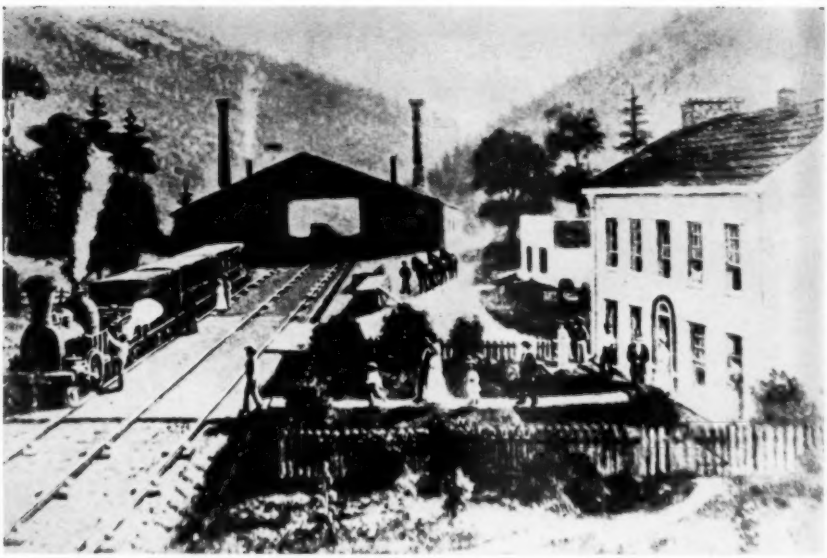
The bill was signed by Governor Pollock on April 21, 1858, and authorized the Sunbury and Erie Railroad to purchase all the lateral works for $3,500,000, with the understanding that the railroad could sell all or part of the works. Within a short time the railroad sold the Upper and Lower North Branch Division to the

29 *Ibid.*, 252.
30 *Ibid.*, 254.

Model of Portage Railroad
Courtesy The Pennsylvania Historical and Museum Commission

Model of Canal Lock at New Hope — Delaware Division
Courtesy The Pennsylvania Historical and Museum Commission

Canal Boat Is Raised on Inclined Plane, Powerhouse Shown in Background
Courtesy The Pennsylvania Railroad Company



Top of Inclined Plane No. 6 Looking East, Lemon House Shown on Right
Courtesy The Pennsylvania Railroad Company

North Branch Canal Company for $1,600,000; the West Branch and Susquehanna Divisions to the West Branch and Susquehanna Canal Company for $500,000; and the Delaware Division to the Delaware Canal Company for $1,775,000.[31]

Pennsylvania had now disposed of all canals and lateral canals, and since there was no longer any need for the Canal Board, it was formally abolished by Act of January 25, 1859. In accordance with the Act all books, papers, maps, records and all other property belonging to the Board, were handed to the Auditor General of the State. In February 26, 1885, they were transferred to the Department of Internal Affairs where they still remain. In 1959 Hubertis M. Cummings, Research Associate, Bureau of Land Records, prepared an outline of the above canal records. Canal historians are deeply indebted to Dr. Cummings for this comprehensive outline. The Canal Board had been organized March 27, 1824, and had served the state for a period of 34 years.

Operation of Lateral Canals After Sale by the State

On May 1, 1866, the Legislature incorporated the Pennsylvania Canal Company, which assumed control of the waterway division of the Main Line, the North Branch Canal and the West Branch and Susquehanna Canals. The canal boats passed to Columbia, where they crossed the Susquehanna River by tugs to Wrightsville, and continued on their way on the Susquehanna and Tidewater Canal, delivering their cargoes to Baltimore, Philadelphia and New York City.

After 1865 no use was made of the Western Division, and after 1889 little use could be made of the Juniata Canal above Newport, as it had been destroyed by the storm that caused the Johnstown Flood. After 1894 use of the Susquehanna and Tidewater Canal ended, and the North and West Branch Canals could accept cargoes for canal ports only as far as Columbia, and finally in 1901 the Pennsylvania Canal discontinued all its waterway activities.[32]

On April 11, 1901, President I. J. Wistar issued a printed notice stating that the Pennsylvania Canal Company lines along the North Branch, the West Branch and the Susquehanna Branch have been abandoned from and after this date. The last boat left Nanticoke on December 9, 1900, bound for Bloomsburg with a shipment of

31 *Ibid.*, 258-259.
32 Cummings, *Pennsylvania Board*, 222-223.

coal. In February 1901 the *Philadelphia Press* noted, "The Canals of Pennsylvania have outlived their usefulness, and it is only a question of time when they will be abandoned." [33]

Conclusion

As we review the history of the Pennsylvania Canal system 100 years after the sale of the Main Line and 60 years after the abandonment of the remaining Lateral Canals, how are we to judge the value of the Canal to the State? We find both assets and liabilities.

Liabilities. The State never made any money on the canal system. The cost of building and operating the canals was greater than the total income. The Canal Board built too many branch canals, due to the logrolling of the Legislature, which never paid for themselves. The canal never captured much of the great trade from the western states.

Assets. Many values accrued to the State and its citizens from the canal. The canal brought in many settlers who cleared the land and established homesteads. It provided cheap transportation to many sections of the State, and thus furnished outlets for new industries. It stimulated the growth of villages and towns. It provided work for thousands of laborers and skilled workers, such as carpenters and stonemasons.

Building the Pennsylvania Canal was a gigantic undertaking that attracted many capable men and developed and trained many leaders. Three Governors of Pennsylvania received their early training on the canal: Francis R. Shunk served as Governor from 1845 to 1848, William Packer served from 1858 to 1861, and John W. Geary served from 1867 to 1873. Matthias Baldwin furnished an early locomotive for the Columbia and Philadelphia Railroad and went on to found the great Baldwin Locomotive Works in Philadelphia. John Roebling worked on the canal and later designed and built the wire rope that replaced the hemp rope on the Portage inclines. He built bridges at Pittsburgh, Wheeling and Cincinnati before he became famous as the builder of the Brooklyn Bridge.

The design and construction of the Pennsylvania Canal system proved to be a great training ground for engineers. John Edgar Thompson worked on the canal and later became Chief Engineer

33 *Ibid.*, 229.

and President of the newly created Pennsylvania Railroad. William Milnor Roberts after working on the canal became the builder of the transcontinental Northern Pacific Railway. Robert Faries became chief engineer of the Sunbury and Erie Railroad. Many other engineers who served with the Canal Board left to take responsible positions and build railroads which at this period were expanding very rapidly.

Probably the greatest value of the canal was that it carried the commerce and transportation of Pennsylvania from the era of the covered wagon to the era when the locomotive and railroad were fully developed and rendered the canal unnecessary.

So fades, so perishes, grows dim and dies,
All that the world was proud of.

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BIBLIOGRAPHY

Annual Reports of the Canal Commissioners, 1825 to 1841.

Bishop, Avard L., Ph.D.: *The State Works of Pennsylvania,* Yale University, New Haven, Connecticut, 1907.

Burgess, George H. and Kennedy, Miles C.: *Centennial History of the Pennsylvania Railroad,* Philadelphia, 1949.

Cummings, Hubertis M.: *Pennsylvania Board of Canal Commissioners Records,* Harrisburg, 1959.

McClintock, Walter T.: "The French Creek Feeder and Conneaut Reservoir, 1827-1872," WESTERN PENNSYLVANIA HISTORICAL MAGAZINE, 22 (1939), 188-200.

Schotter, H. W.: *The Growth and Development of the Pennsylvania Railroad Company,* 1846 *to* 1926, Philadelphia, 1927.

Tanner, H. S.: *Canals and Railroads of the United States,* New York, 1840.

Wilson, William Bender: *History of the Pennsylvania Railroad,* Vol. 1, Philadelphia, 1895.

Wilson, William Bender: *The Evolution, Decadence and Abandonment of the Allegheny Portage Railroad.* Annual Report of the Secretary of Internal Affairs, Part 4, Harrisburg, 1898-1899.

EARLY MAP MAKERS OF THE OHIO VALLEY

LLOYD ARNOLD BROWN

IT is a real pleasure to be here with you this evening. It would be presumptuous of a man who has lived most of his life on the other side of the mountains to try to tell you anything about your River and your Ohio Valley that you don't already know. Actually I am not going to try to, because I think it would be fatal. My first-hand knowledge of the Ohio River is almost nil, I am sorry to say, but I'm going to remedy the situation one of these days. I'm in the same position Amos Evans was in 150 years ago when he was Navy surgeon aboard the United States *Constitution.* Amos took care of the men aboard the *Constitution;* he took care of the sick and the dying, including the casualties that followed the engagement with the French battleship *Guerriere.* No one complained about him, but he felt a little guilty about his position as surgeon, because he had had no training for that sort of thing. So,—after the War of 1812 was over he packed his bags and went to Harvard Medical School to study some medicine.

Now that I have finished writing a book about the Ohio Valley, I fully intend to take a trip, either by boat or automobile, from one end of the River to the other. In that way I will begin to appreciate fully what I have been writing about.

What I *can* talk about this evening, with some authority, is the early map makers of the region—what they saw, what they did, how they worked and what they produced in the way of maps, and this I am going to do. First of all, let us take a brief look at the background, the country in which they worked. I am going to read you excerpts from one of the best of the modern reconstructions of the Ohio Valley as it was three hundred years ago. It was written by Dale Van Every in his *Men of the Western Waters.* "This splendid area," he wrote, "is still a fine country, as the present inhabitants will be quick to attest. But the people who knew it then deemed it so much superior to all others as to be without

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An address delivered before the Historical Society March 30, 1960. Mr. Brown, author of *Early Maps of the Ohio Valley,* is an experienced cartographic historian. As author, he has written many books and articles in his field.—Ed.

possible rival. Nowhere else were trees so magnificent, meadows so green, streams so clear, flowers so brilliant, game so plentiful. To the Indians the heartland of the Valley offered something more than a lavish supply of game to provide them with food and clothing. They were touched by the sheer beauty of the country . . . To them the alternating winter and summer movement of air in and out of the great caverns marked the place the earth breathed . . . They spoke of it as might men who had caught glimpses of the Elysian Fields or the Isles of the Blessed. . . .

"There was the primeval forest . . . Herds of wild animals trampled wide, beaten paths from scores of miles to lick the salt-encrusted earth around the saline springs. Man used the same paths and the same spots in search of both salt and game. The forest was the paramount physical feature of the region. It covered the entire valley. The trees were enormous. One sycamore was measured by an early naturalist as forty-seven feet in circumference."

On the hillside and in the stream bottoms the undergrowth resembled a jungle. But in other places, the treetops, with their canopies of grapevines, shut off so much light that the ground beneath was almost clear, and therefore passable to horsemen.

Thousands of beaver dams helped to control the flow of water in the Ohio and its tributaries from one season to the next, but of course there were periodic floods after exceptionally heavy rains.

The waters of the Ohio Valley teemed with fish—hundred pound sturgeon, gar and catfish, forty pound perch, twenty pound pickerel and ten pound trout. The migration of birds in both directions formed an almost endless procession across the sky, sometimes so dense that it darkened the sky, and when they roosted at night there were so many of them that the limbs of the trees split from the weight.

Buffalo roamed the area in vast herds. Their traces crisscrossed the Valley, following easy river crossings to salt licks and favorite feeding grounds. Huge herds of elk roamed the same paths through the wilderness. In the early days of exploration bears were as numerous as deer. Wolves ranged the whole region in ferocious packs.

In addition to the wild animals there was the vegetation—and nearly every early explorer wrote something on the subject of the lush appearance of the Valley. There was the giant cane that grew all over the place up to a height of six to twelve feet. In some places

it grew to be thirty feet tall with a stalk as big around as a man's arm.

This great Valley was a terrestrial paradise to the early naturalists who explored it. In the proper season the ground was blanketed with azaleas, magnolias, delphinium, rhododendrons and hundreds of other flowers of all varieties. Among the edibles were blackberries, raspberries, serviceberries, gooseberries, wild plums, pawpaws, wild cherries, apples and a wide variety of nuts. The wild grape was everywhere, apparently, roaming and flourishing so that sometimes the stem was a foot thick at the base.

Those wild grapes have fascinated me ever since I first read about them. (I wouldn't mind having a few cuttings to plant in my back forty.) Baron Lahontan, one of the early explorers, described them for his readers. "The vines," he said, "twine around the trees to the very top, and the branches of those trees are so covered with grapes that one would take the grape to be the fruit of the tree." The flavor was good, he said; in fact, it was so good that people had pressed some wine from these grapes, which, "after long standing, became as sweet as Canary and as black as ink." Well, this was roughly the picture men saw when the Ohio was at its best, when the season and the weather were right. It was, in every respect, the Beautiful Ohio. But the Ohio Valley, like most other places in the world, has different seasons and different weather, and the River itself is not always friendly. It has its moods. The seasonal beauty fades, the weather gets rough and the river gets turbulent. And many of the early explorers and map makers were forced to see it and live with it when it was *most* unfriendly.

In this regard I have thought a great deal about General Forbes and his army, and what impression they must have gotten when they tramped up to Fort Duquesne in December of 1758. The rhododendrons were not in bloom; the grapes were dry on the vines; in fact, it was cold and bleak around the Valley. There was ice in the creeks and along the banks of the River. Many of the game animals had holed up for the winter, and the land around the Point, in fact, the River itself, must have looked barren and forlorn. Adding insult to injury, the good General was robbed of a military victory at the Point, because the French garrison had done a thorough job of demolition before they abandoned Fort Duquesne. I submit —General Forbes saw the Ohio at its worst, and he also found himself with an army, far away in the wilderness, which was going

to have to forage for food as well as shelter. This kind of a situation does not leave a sweet taste in the mouth or a favorable impression in the mind.

Now these contrasting pictures of the Ohio Valley in the early days represent a pretty good cross-section of what the early map makers saw and experienced. They saw the Ohio in all its moods, and they took the good with the bad. And because map makers are often dedicated men, the early ones and the ones that came after them coped with the elements and the wild life, and accomplished a great deal under terrific handicaps.

What manner of men mapped the Ohio Valley? There were many varieties. Some of them were explorers and adventurers who were interested only in the quickest and easiest road to wealth. They were *dedicated,* in a sense! Others were trappers and hunters who were less aspiring. But nevertheless, they wanted to be sure at all times that they could get from place to place in the easiest possible way. The minority group, I think, were the military surveyors, the paid professionals, who struggled manfully against the elements and against enemies of all kinds—two-footed and four-footed.

However, the *real* pioneer surveyors and map makers in the Ohio Valley were the native Indians. I suspected it for many years before I found any good evidence to support my theory. These human beings were faced with a serious problem—the problem of survival in a vast territory where it was all too easy to get lost. Distances and directions were expressed in loose terms, but they worked out a system of getting from place to place in the shortest possible time, because it was often a matter of life and death to get to the end of the journey. In addition to the problem of getting from place to place, the Indians were obliged to observe and maintain certain territorial boundaries between their own and neighboring tribes. This they did with a fair amount of success. In many respects they were not as primitive as the white man wanted to think they were.

To be sure, they were crafty, cruel, susceptible to bribery, treason and firewater. But when it came to their own country and their knowledge of it, they were useful people to have around. They were thoroughly familiar with the terrain and how to get along with it. They knew where the salt-licks were and where the buffalo grazed, and where to find fresh water to drink. They followed the well-worn trails of the wild animals through the forest, because

they knew that the animals had learned from experience which way to go and what there would be in the way of safety and comfort at the end of the trail.

The early explorers and map makers logically assumed that these primitive native Americans, these Indians, were sadly lacking in scientific knowledge of all kinds, and especially the science of map making. But some of the earliest white men soon discovered how wrong they were in their assumption. One of them had this to say about the native: "They are as ignorant of Geography as they are of the other sciences, and yet they draw the most exact maps imaginable of the countries they are acquainted with. For there is nothing lacking in these maps but the longitude and latitude of places. They set down the *true* North according to the Pole Star; the ports, harbors, rivers and creeks, the coasts of the lakes, the mountains, woods, marshes, meadows, and so on, counting the distances by 'journeys' and 'half-journeys' of their warriors, and allowing to every Journey five leagues. These maps are drawn upon the rind of your birch tree; and when the old men of the tribe hold a council about war or hunting they never fail to make use of them."

The old men of the Indian tribes were not the only ones who used these earliest maps of the Ohio Valley. The white men, that is the intelligent ones, including the pioneer surveyors, soon learned that they could not possibly cope with the wilderness without the help of the Indians, and they most certainly could not get a clear picture of the country without the help of his maps, even if they *were* sketched on the "rind" of the birch tree.

To be sure, these early Indian maps were not always reliable. Sometimes the Indian who made the map was not as well informed as he claimed to be. Sometimes he was drunk on firewater when he made his map, having been paid in advance by the white man for his geographical information. Occasionally the Indian deliberately falsified information in order to throw the white man off the scent of a prime place to hunt or a short-cut through the forest. But when he was in the proper mood and had been well paid for his time and trouble, the Indian could steer a course through the wilderness or through a complex system of lakes, rivers and unmarked portages without deviation. In short, he was the first American geographer and the first to map the Ohio Valley. His birch-bark maps are gone, but they are not forgotten. Without them the mapping of America would have been delayed a hundred years or more.

Whether the early French and English explorers were helped by the Indian or not, they all led a rugged life in the wilderness. Surveying and mapping, regardless of the terrain, and the presence or absence of civilization, is just plain hard work. It *was* three hundred years ago and it is today. But the lot of the pioneer surveyor in the Ohio country was seldom a happy one. He was often handicapped by untrustworthy guides, and misleading information that was passed on to him by an earlier explorer who didn't really know what he was talking about. The physical discomforts were always with him . . . wet feet, cold hands, the danger of attack by predatory animals or equally predatory humans.

The journals and notebooks of some of the early surveyors are revealing, and they make fascinating reading. The men usually traveled in small parties. When they wanted to take a sight or a bearing in the wilderness it often took three men. One man peered through the instrument—the equivalent of a modern surveyor's transit—while his two assistants stood close by with their rifles cocked—to cover him against a sudden attack by an animal or a human. But even these elaborate precautions did not always work. There was the case of Thomas Hutchins, the first Geographer to the United States. In the 1780's, he and his deputies were surveying the seven ranges of townships northwest of the Ohio River. Two of his men turned up missing—they just didn't report back from the line they were running out in the forest. So Hutchins sent out a search party to find out what had become of them. The men were found, eventually, or what was left of them. The remains consisted of two scalped heads fastened to a tree. That was all.

One of the most serious problems the early surveyor had to contend with was the care and preservation of his precious equipment, and his equipment was in constant danger. If he left it unguarded it disappeared in the forest without a trace. If it was exposed to the weather, as it always was, it had to be cleaned every night after the day's work was over, just as his guns had to be cleaned. And if a canoe tipped over and he was lucky enough to retrieve his gear and instruments, he had another cleaning job on his hands.

I suppose one of the scarcest and perhaps the most important part of his equipment was his supply of paper and pens. Paper and parchment were scarce commodities on the frontier, and they were preserved as carefully as gunpowder. No map man knew where the

next supply would come from or when it would get to him. If his paper went overboard and was hopelessly waterlogged he was almost in the same position as the man who has a gun but no ammunition to go with it. In the British and French armies, paper and all other drafting supplies were very carefully rationed. The military engineers never had enough, or so they said. But these fellows also complained about many other things, such as the trifling allowance they received for firewood and some of the other small comforts of life—so one can't be too sure about garrison life and the military engineers.

When the early surveyors took to the field with all their equipment and whatever provisions they could muster, they found the Ohio country just as others had found it, with all its virtues and all its faults. When the season was right and the weather was good their surroundings were beautiful in the extreme. When the season was wrong and the weather was bad, they did the best they could with what they had to work with, because once a survey was started it was seldom abandoned before it was finished.

In some respects the fall and winter seasons were best for surveyors, because the dense foliage was gone and they could really see what they were doing and where they were going. In the spring and summer they sometimes had to spend days and even weeks clearing the underbrush and chopping down trees so that they could run a line, measure it with their chains and poles, and whenever necessary take a sight of the sun with their astrolabes or quadrants. In the late summer, when the forest was canopied with lush foliage it was sometimes difficult to *find* the sun through the leaves—or at least fix its position with any degree of accuracy.

These are just a few of the physical problems that all of the early map makers had to face. And they all amounted to one thing —how to get along in the wilderness and get the job done.

Now what were some of the other problems? There were a great many, especially when a map maker sat down and tried to put his notes together: his measurements of the land and his observations of latitude and longitude. He had to consider the size of the sheets of paper he was going to use, and therefore the scale of his map. He had to be able to express distance and direction in terms that other people would understand. In short, he had the problem of interpreting and conveying, of making his map tell as much as possible about the area he had surveyed—clearly and con-

cisely. He was expected to provide his readers with the proper latitudes and longitudes of the important places he had mapped, as well as the courses of rivers, the location of mountains and valleys, villages and portages—and as much more information as he could possibly supply. This was a large undertaking, but somehow or other he did it.

There was another stumbling block, and that was the matter of place names, the naming of geographical localities, whether they were forts, lakes or rivers. And on this score, the maps that were made during the first two or three hundred years of America's history present a puzzle that is impossible to solve: the identification of early place names with their modern equivalents. Many scholars have spent thousands of hours and written millions of words trying to defend their selections or interpretations, and there is no end in sight.

If you were an explorer and map maker, going into a new land unknown to you and most of your fellow men, where no geographical landmark had a well-established name, you *could* and *would* call them just about what you pleased, and that is precisely what happened in early America and in the Valley of the Ohio River. Place names were selected more or less at random. As a result, all too often a river or a settlement had several names, and these names might be spelled out in several different languages—all of which made for confusion. Some places took their names from a superior officer, or a king, or a loving relative. Sometimes a place was given a name which seemed to describe it best—such as *La Belle Riviere, La Riviere Fine,* or the Ohio. So—it behooved a map maker to pick carefully and pick the right one, especially if a political bigwig was in the background and responsible for his promotion.

With this kind of a hit-or-miss system of naming geographical locations, you can readily see the confusion that was created, both among the early map makers who tried to compare notes with their colleagues, and among historians who later tried to reconstruct the geographical picture of the early days of exploration.

In view of the wide assortment of people from all walks of life who tramped through the wilderness of North America three hundred years ago, it seems almost incredible that any accurate maps at all were made during the 17th and 18th centuries. But there were—and there is no great mystery about it.

Just about the time the first white men found the Ohio and be-

gan to explore it, French scientists in Paris were struggling mightily to figure out ways of improving maps and charts. Louis XIV was by no means a total loss as a king, and his principal Secretary, Jean Colbert, was his greatest asset in court. The Royal Academy of Sciences, now the Institut de France, was founded and financed with the help of Jean Colbert. The Royal Academy was instrumental in sending astronomers and map makers all over the world to make new observations and new measurements. The city of Quebec and Mexico City were two of the most important stations set up in the New World. Distances between important places were remeasured, the latitudes and longitudes in all parts of the North American continent were recalculated, and the resulting maps were amazingly accurate.

The Ohio Valley didn't receive much attention from map makers until the French and English began to appreciate how important it was as a military highway and a control point for the fur trade, but after both nations began to get the point, things moved fast and maps improved by leaps and bounds. The Forks of the Ohio—the Point—took a place in military and diplomatic history along with Fort Ticonderoga, Crown Point and New Orleans, as a strategic spot of great importance. Moreover, the people in the eastern part of the nation were looking over the mountains and seriously considering the possibility of taking over the entire region—against all comers. The French, of course, had other ideas. But every day, it seems, the demand for better maps of the region increased, just as the political situation worsened.

The Ohio country was carefully scrutinized by many people of all kinds. It was a region ideally suited for English settlements and a potential source of great wealth. The question was how to get it away from the Indians and at the same time keep it out of the hands of the French. This was going to be a neat trick, and a terrific amount of diplomacy as well as geographical information was involved.

Treaties had to be arranged, signed and sealed, geographical boundary lines had to be firmly established; land had to be parceled out and sold—assuming that someone had the right to sell it.

All these machinations involved the map maker and his maps. He found himself involved in one of the biggest land grabs the world had ever seen. The land was rich, the trade in furs was worth fighting for, and both France and England, their merchant adven-

turers and their diplomats, were convinced that the interior of North America was there to stay, and that it was destined to play an important role in the world market place. And at that point the map maker came into his own (although he was usually poorly paid for his trouble). It was his job to measure whatever piece of land was in dispute, and to describe it as best he could. He was also expected to make a picture of it that would mean something to the authorities, or to the traders and land speculators who were involved in the land transaction. Now—how did he go about helping the Indians sign away their birthright, and how did he describe the land they finally agreed to sell? There are many interesting stories about all this.

For example, there was the project referred to as "The New Colony." This new colony which was to be laid out close to the Ohio River was named Vandalia—well in advance. This real estate project or development was first suggested in 1763. It was the era or the beginning of the era of the great land companies in America. Many prosperous and influential citizens, both here and abroad, were involved in the Vandalia scheme, but especially certain merchant interests in eastern Pennsylvania and Virginia. Many of the investors in the Vandalia deal had never laid eyes on the Ohio country—any part of it, but they invested their money on the strength of the glowing reports they read by such eminent authorities as George Croghan, the Indian agent and trader. Croghan knew the country well, and knew how to sell it. Therefore, there was very little trouble in getting people in the East to invest in the new colony.

There was just one catch to the whole Vandalia deal—nobody knew just where it was or how much territory it covered. Of course, many people, including those who had invested money in the enterprise, had a rough idea of where the new colony would be set up, but no one knew for sure what its geographical boundaries would be. The promoters of the territory told different stories about its size and potential value. Depending on who described it, the colony varied in size from a paltry few hundred thousand acres, to twenty *million* acres. In fact, a good many people were investing their money in a vast territory that had never been properly surveyed, and land without a clear title from anyone to anyone else. The litigation in connection with the Vandalia scheme, the dream-world on the Ohio, would fill several books, but the point I want to stress is that everything would have been much simpler if the

people involved had been able to come to an understanding about place names for rivers, creeks and settlements—geographical landmarks, in other words.

Which, for example, was the Louisa River? No one was sure. It may have been the Kentucky, or the Catawba, or some other stream.

When we study the old maps and the treaties that went with them, we should keep in mind that it is not easy to describe a piece of land, no matter where it is located, in such a way that everyone will understand it and so that the description will hold up in court. (Those of you who have done any trafficking in real estate will know what I mean.) And when we go back to some of the early boundary descriptions we should not be surprised at anything. For example, there is an old description of a tract of land, written and published about three hundred years ago, which closes the piece of property with these words: "and from thence the line runs due west 120 paces to the old oak tree with the bluebird sitting on the limb." Wouldn't the lawyers have a bully time with that?

One of my favorite boundary stories, which involves a treaty as well as a boundary line, comes from eastern Pennsylvania—the far east, by the way. In the history books it is known as "The Walking Purchase," and the cast of characters included Mr. William Penn and the Delaware Indians. One might say that it was William Penn *versus* the Delaware Indians, because that is about what it amounted to.

It seems that in 1686 the Delaware Indians deeded to William Penn a tract of land at the fork of the Delaware and Lehigh Rivers. In depth, this land reached "as far as a man can go in a day and a half." Now this standard of linear measure was not as primitive as it sounds, because the Indians had a pretty good idea of how far a man of Penn's size and build could walk in a day and a half without killing himself. It was like a boy who lets his friend have a bite of his apple. Experience teaches a boy just about how much of his apple he is going to lose, and he counts on losing the maximum.

William Penn walked off a piece about forty miles long in a day and a half, which is rather good going by current standards. I suspect that he took it fairly easy, because he had already done very well in Pennsylvania real estate, and he probably wasn't too worried about the future. That was that.

Then in 1737, the Delawares agreed to a new release of this same tract, and apparently both parties agreed that it should be

remeasured—or rewalked. But this time Thomas Penn, William's son, was in charge, and like Lord Kelvin, who thought of a better way, Thomas Penn sent out a clarion call for the best athletic talent in the Province of Pennsylvania. His walkers were good men, but they left their amateur standing behind them when they went to work for Thomas Penn. There are various amusing stories about the numerous little devices that the boys used to help smooth the path over the horizon—trees and other obstacles were removed from the path and off the boys went. Well, in the prescribed day and a half, Penn's professionals stepped off 66½ miles in a northwesterly direction—almost to the Poconos—thereby giving the boss a little plot of some 1200 square miles, including portions of Bucks, Carbon, Monroe and Pike counties, and about nine-tenths of Northampton county. (Good grazing land, on the whole.) I suppose if those fellows were sent out today they would do even better, what with the help of a little benzedrine or some other modern aid to navigation.

I have often thought I would like to write a book about boundary descriptions, because many of them are as amusing as the Walking Purchase. But if I looked hard for the rest of my life I would probably never come up with a better one than the description of a piece of property that was duly signed and recorded about a hundred and fifty years ago. The deed describes a tract of land in the following words: "Bounded on the North by Brother Jim, on the West by Brother Bill, on the South by Sister Sal, and on the East by Mother."

THE RAILROAD COMES TO PITTSBURGH

WILLIAM KENNETH SCHUSLER

BECAUSE of its strategic position at the headwaters of the navigable Ohio River, Pittsburgh early became a gateway to the West and the most populous English settlement in the trans-Allegheny region. The city wedded land and water transportation: many of the roads and trails from the middle eastern seaboard stretched tortuously across the Appalachians and then moved in converging patterns into the Pittsburgh district,[1] while at the same time, the Ohio River provided a natural artery into the West and South. Practically speaking then, Pittsburgh had a predominant position on the only modes of intercommunity transport that were then available.[2]

During the first two decades of the nineteenth century, the city became an increasingly important transportation and boat building center. Robert Fulton and Robert Livingston, after launching the *Clermont* on the Hudson River in 1807, established a shipyard at Pittsburgh in 1811 and built the steamboat *New Orleans*, the first to operate on the western rivers, which made its maiden voyage down the Ohio and Mississippi during the fall of 1811. The voyage was historic and ushered in a new era during which commerce on the Mississippi and its tributaries increased steadily and was estimated at $654,000,000 in 1852.

After the steamboat had proved itself on the Ohio, the main interest and problem of the Pittsburgh region was the improvement of transportation routes eastward over the mountains to the Atlantic Seaboard. For the most part, only rough roads or trails existed and freight rates for the journey were very high, limiting the commerce to small quantities of the highest rated traffic. The stage-

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1 Perhaps the most extensive treatment of highway development is found in the ambitious efforts of A. B. Hulbert, *Historic Highways of America* (16 vols.; Cleveland, A. N. Clark Co., 1902-5).

2 Caroline B. MacGill, *History of Transportation in the United States before* 1860 (Washington, D. C.: Carnegie Institution, 1917).

J. L. Ringwalt, *The Development of Transportation Systems in the United States* (Philadelphia: Railway World Office, 1888).

coach, the Conestoga wagon, and the pack horse were the important carriers of the day. The Forbes Road, one of the important routes through the mountains, was in effect an extension of the Philadelphia-Lancaster Turnpike. It proceeded by way of Carlisle and Bedford, but only a small portion of the whole route had a hard surface. Beyond Lancaster it was rough going and very slow. The condition of the road is described by Burgess and Kennedy who quoted an unidentified contemporaneous account to the effect that "it required a good team of five or six horses from eighteen to thirty-five days to transport from 2500 to 3500 pounds of goods from Philadelphia to Pittsburgh." [3]

Because of the difficulties connected with land travel over mountainous terrain, it was only a matter of time before enterprising and imaginative men should look more avidly toward connecting water routes as the answer to inland transportation. Quite obviously, the first connecting canal to recommend itself was one that would link the Hudson River with the Great Lakes System. Despite acrimonious debate, the Erie Canal was begun with a nice sense of timing on the fourth of July, 1817. When, in 1825, Governor DeWitt Clinton was towed on a long, flat canal boat named the *Seneca Chief* through the harbor of New York City toward a point near Sandy Hook, a momentous moment was dramatically symbolized.

The cost and speed of a ride on the 363-mile canal was summed up in the chant, "A cent and a half a mile, and a mile and a half an hour." During the first nine years of its operation it yielded tolls of $8,500,000, substantially in excess of the seven million dollar investment made by the state of New York. Freight rates from Buffalo to New York dropped from one hundred to fifteen dollars per ton and the time of transit from twenty days to eight.[4]

The stunning success of the Erie Canal jolted Pennsylvanians from any complacency they might otherwise have entertained. Since the railroad was now beginning to appear on the American scene, the Pennsylvanians apparently had the choice option between the rail or the water link. After considerable debate it was decided that the untried and unproved railroad was too risky an investment even though practical considerations eventually led to a combina-

3 G. H. Burgess and M. C. Kennedy, *Centennial History of the Pennsylvania Railroad Company* (Philadelphia: The Pennsylvania Railroad Company, 1949), 4.
4 G. R. Taylor, *The Transportation Revolution* (New York: Rinehart and Company, Inc., 1951), 34.

tion of both modes. By an act of the legislature in February, 1826, the so-called "Pennsylvania State Works" was authorized. They were designed to provide a connecting link between Philadelphia and the West and were opened to the public in March, 1834. As it turned out, the complete works consisted partly of railroads (one of which stood out among the greatest engineering achievements of the era) and of canals. The entire distance between Philadelphia and Pittsburgh via the Pennsylvania State Works was 394 miles.[5]

Compared to the Erie Canal the Pennsylvania State Works was spectacular as an engineering feat, breathtaking in view, and unfortunately expensive and cumbersome. A shipper at Pittsburgh, for example, had to move merchandise on a canal boat 104 miles, shift to the Portage Railroad, transfer it once again to a canal boat after the thirty-six mile railroad jaunt, and then back to the train.[6] Winter's ice, mismanagement by political jobholders, expensive maintenance and repair drove cost upward and by 1846 less than seven per cent of east-bound traffic came via the Pennsylvania Public Works. Of the rest, roughly half sought its market through New Orleans while the remainder enriched New York.[7]

In the interim, Baltimore's interest in carving a chunk of revenue from westward traffic led to the construction of a line of the Baltimore and Ohio Railroad west along the Potomac River toward Cumberland, Maryland. A further objective was an all-rail route across the mountains to the Ohio River.[8] A possibly remarkable feature during this stage was that, despite transportation handicaps, Pittsburgh continued to be a thriving city. The Ohio

5 For one of the early reliable accounts, see A. L. Bishop, "State Works of Pennsylvania," New Haven, Volume XIII of the *Transactions of the Connecticut Academy of Arts and Sciences*, 1907. For earlier private canal projects, the reader is referred to C. L. Jones, *Economic History of the Anthracite-Tidewater Canals* (Philadelphia: University of Pennsylvania, Series in Political Economy and Public Law, No. 22, 1908).

6 The line consisted of four major units. The first was the Philadelphia and Columbia Railroad which began at Vine and Broad Streets in Philadelphia and ran westward a distance of eighty-one miles to a terminating point at Columbia on the Susquehanna. At Columbia the railroad was linked to the eastern and Juniata divisions of the Pennsylvania Canal which ran 172 miles to Hollidaysburg. At Hollidaysburg the Allegheny Portage Railroad picked up the link and, rising nearly 1400 feet in ten miles by means of inclined planes, crossed the summit of the mountains, and then, by the use of inclined planes upon the western side, descended to Johnstown, a distance of 36.69 miles. The final unit was the western division of the Pennsylvania Canal which ran 104 miles from Johnstown through Pittsburgh to the Monongahela River.

7 E. D. Branch, "Success to the Railroad," *Western Pennsylvania Historical Magazine*, XX (March, 1937), 4.

8 The Baltimore and Ohio was completed to Cumberland in November, 1842.

River still provided a marvelous outlet to the west and discovery of fabulous amounts of high-grade bituminous coal in the area had transformed it into a leading industrial community. It was evident, however, that a gradual strangulation might set in if the city's need for a tie-in with eastern markets was not met. The canal system had proved inadequate for the task and the shimmering rail rather than the shimmering water seemed to be the clue to the future.

1846 was a high-water mark in the transportation history of Pennsylvania for in that year the state legislature granted a charter to the Pennsylvania Railroad for the construction of a transmountain westward route to Pittsburgh. Certainly, for a long period of time, the state's legislators had been made painfully aware of the need for vigorous and imaginative action. As early as 1818, Colonel John Stevens had memorialized the Pennsylvania Senate on the "Expediency of a Railroad from Philadelphia to Pittsburgh" and had continued a one-man campaign to keep the subject alive; excellent surveys had been submitted to the legislature in 1842 by Colonel Charles L. Schlatter but it remained for the success of the Erie Canal to galvanize the Assembly into action.[9]

Construction of the line began at Harrisburg on July 7, 1847, and the first section of the railroad between Harrisburg and Lewistown was opened for service on September 1, 1849. Construction was later also undertaken at the western terminus, Pittsburgh, and twelve miles of the line from Pittsburgh to Brinton or Turtle Creek was completed by the fall of 1851. Although the railroad destined to become the most important in Pennsylvania was thus successfully launched, it had to content itself with being the second to open its rails for traffic at Pittsburgh.

The Ohio and Pennsylvania Railroad was actually the city's first line in operation. This railroad had been chartered in 1848 in order to strike directly into the heart of the Ohio wheat region and, by joining other lines under construction, to link Pittsburgh to Cincinnati and Cleveland. In addition, it was eventually planned to make the railroad part of a chain which would join the Iron City to Chicago or St. Louis.[10] A tremendous crowd gathered at the old Canal Basin in Allegheny City (then, politically independent of Pittsburgh proper) on July 3, 1851, to watch workmen move from a canal scow a black and shiny giant called the *Salem*—the first

9 W. B. Sipes, *The Pennsylvania Railroad* (Philadelphia: The Passenger Department, The Pennsylvania Railroad Company, 1875), 11-12.
10 Branch, *op. cit.*, 6.

locomotive to puff out of Pittsburgh.[11] A short trial run of the engine caused great excitement for the assembled throng but it was not until July 30 that the formal opening of the railroad took place. Thereafter, crowds invariably jammed the station to watch the coming and departure of the new marvel.[12]

On December 10, 1851, the Pennsylvania Railroad ran its first excursion train with the usual cargo of distinguished civic and industrial leaders as far east as Turtle Creek. Obviously, the Pennsylvania atoned in some measure for its somewhat tardy arrival on the scene by providing superior coaches; at least this is the impression created from the account in the *Pittsburgh Daily Gazette*. The editor observed that "the roadbed itself was first-rate which allowed for smooth-running cars." Then he goes on to declare that "the cars are of the first class, and the handsomest, taken as a whole, we have ever seen. They are truly luxurious. At Wilkinsburg and at Turtle Creek very handsome station houses have been erected, and at the latter place there is a turntable, to answer the purposes of an accommodation train to that point."[13]

Two annoyances arose almost immediately to plague the long-distance traveler. Despite all the fanfare which attended the inauguration on December 11, 1851, of regular passenger service from Pittsburgh to the East, through-rail accommodations were still incomplete. If one left the city on the 6:30 a.m. train, for example, he was forced to disembark at Turtle Creek, climb into one of the waiting stagecoaches for almost thirty miles of turnpike travel to Beatty's Station (Latrobe), where he could then resume his railroad service.[14]

Late in the autumn of 1852, the gap in the rail line between Turtle Creek and Latrobe was completed and put into operation and Pittsburgh was connected by continuous rail with Philadelphia.[15] Accommodation or commutation trains were running regularly to the eastern suburbs and the section of the main line between Pittsburgh and Turtle Creek became the busiest commuter route in the Pittsburgh Area. Pennsylvania Railroad advertisements in the

11 J. P. Cowan, "Beginning of the early railroads in Pittsburgh," *Western Pennsylvania Historical Magazine*, XII (January, 1929), 116-117.
12 C. W. Dahlinger, "Old Allegheny," *Western Pennsylvania Historical Magazine*, I (October, 1918), 208.
13 *Pittsburgh Daily Gazette*, December 11, 1851, 2.
14 Branch, *op. cit.*, 12.
15 The Pennsylvania had acquired a rail link between Harrisburg and Philadelphia in 1850.

newspapers notified the public that commuter trains departed from the downtown depot for Turtle Creek at 11 a.m., 3:30 p.m., and 6:20 p.m., and that a commuter train going as far as Blairsville departed at 4:30 p.m. daily.[16]

The Pennsylvania Railroad prospered in these early years. Its original route was located with such engineering skill that very minor changes have been made in over a century of continuous operation. By 1855 the railroad owned 118 locomotives, 119 passenger cars, and 1635 freight cars. Most of the locomotives were wood burners and weighed from fifteen to thirty tons.[17] While the Pittsburgh terminal was adequate in most respects there arose the second of the two inconveniences mentioned earlier which plagued the traveler. The Ohio and Pennsylvania Railroad had its passenger station and terminal in Allegheny City across the Allegheny River from the Pennsylvania depot.

By this time, the Ohio and Pennsylvania had its direct connections extended as far west as Fort Wayne, Indiana, but all through east-west traffic had to be transferred at Pittsburgh because no connection existed locally between the two railroads. An enabling act had been passed in 1854 permitting the construction of a railroad bridge across the Allegheny River but Allegheny City, fearing a loss of revenue, created intense opposition to the bridge and the work was delayed. It was not until 1858 that the bridge was completed and through traffic flowed uninterrupted between the Pennsylvania Railroad and the Ohio and Pennsylvania.[18]

While it is true that the east-west railroad lines (of which the Pennsylvania Railroad was the great protagonist) commanded the greatest attention, it should not be inferred that the communities lying to the north and south of Pittsburgh were being neglected. Prior to the Civil War, two major roads were constructed to serve these regions. As early as 1837 local interest had promoted and incorporated the Pittsburgh and Connellsville Railroad which, in addition to providing necessary commuter service, could provide an effective link from Western Pennsylvania to Baltimore. The promoters of the Baltimore and Ohio Railroad had envisioned Pittsburgh as the ideal western terminus to link the Maryland city with Ohio River travel. Pittsburgh's economic interest dictated alle-

16 *Pittsburgh Daily Gazette*, January 24, 1855, 3.
17 Burgess, *op. cit.*, 84.
18 *History of Pittsburgh and Environs*, II (New York: The American Historical Society, Inc., 1922), 163.

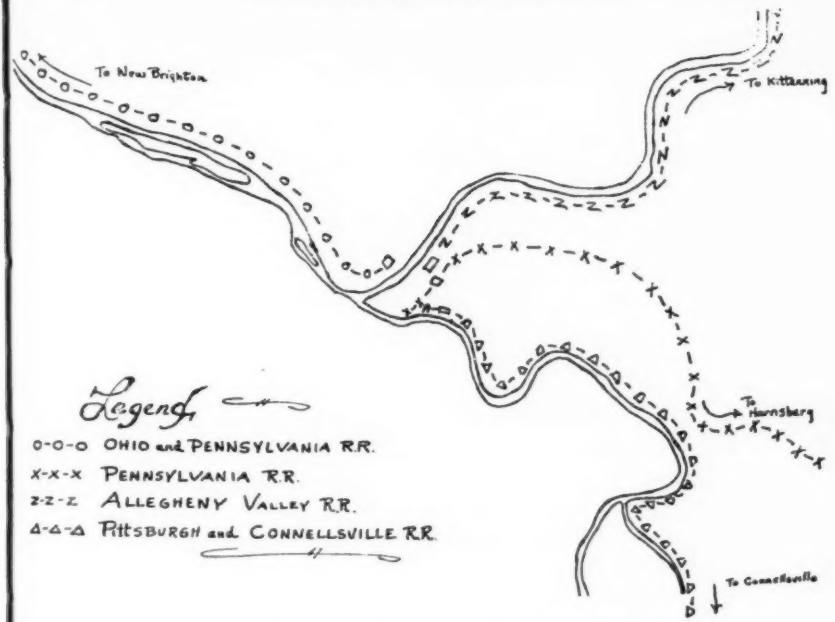

Figure 1. Railroads Constructed in the Pittsburgh Area before 1860.

giance to this bold plan just as surely as Philadelphia's interests were destined to oppose it. Since the Pennsylvania Railroad was controlled by financial interest in the East and since the legislature itself was dominated by Philadelphia interest, it is not surprising to discover that efforts to construct a line from Cumberland, Maryland, through southwestern Pennsylvania were stoutly resisted. The Assembly in Harrisburg steadfastly refused to grant permission for such construction. And the pages of the *Pittsburgh Gazette* bristled with talk of secession from the rest of the Commonwealth if Baltimore was denied direct access to this region.

Cut off from adequate financial backing, the proposed connection between Pittsburgh and Connellsville was repeatedly delayed; a decade passed between the charter date and the beginning of actual construction of the line (1847). And another eight years passed before even the first section of the railroad, running from Connellsville to West Newton, was opened for traffic.[19] On the

19 J. S. Clark, "The Railroad Struggle for Pittsburgh," *The Pennsylvania Magazine of History and Biography*, XLVIII (January, 1924), 11-12.

eve of the Civil War, the line was completed to Pittsburgh to make connections with the Pennsylvania Railroad. After the Civil War, permission was finally secured from the State Legislature to construct a tie-in between Connellsville and Cumberland, and the Baltimore and Ohio finally had achieved its goal of reaching into the heart of the Pittsburgh region.[20]

Paralleling the construction of the southern line were efforts to extend fingers of rail northward along the Allegheny River Valley toward Kittanning. While this effort escaped the frustrations which flowed from the rivalries between two great competing railroads and two ambitious metropolises (Baltimore and Philadelphia), it could not wholly avoid the problems of inadequate financing. Chartered in 1837 to build a line from Pittsburgh to Kittanning, thence by the most direct and eligible route to the New York state line, the Allegheny Valley Railroad was unable to launch actual construction until 1854.[21] The usual press encomiums characterized the running of the first train on January 23, 1856. The *Daily Gazette* remarked that "a mass assemblage of citizens . . . preceeded by Young's brass band, marched through the major streets of Kittanning." [22]

The construction of this first small segment strained the company's limited financial resources and another seven years passed before a ten-mile stretch was pushed to the mouth of Mahoning Creek—little better than an average of a mile a year. In the interim, however, oil fields around Titusville fifty miles to the north, began to expand rapidly and the Pennsylvania Railroad sensed great latent opportunities in oil traffic. Accordingly, the "Pennsy" provided financial backing to the Allegheny Valley Railroad so that by 1868 Venango City (just across the river from Oil City) was linked to Pittsburgh. The line met with instantaneous success; freight revenue jumped five-fold and passenger traffic doubled during the next five years.[23] As the industries developed to the north, small towns mushroomed around the centers of business activity and the Allegheny Valley Railroad soon became an important commuter route.

The advent of regular commuter train service over the railroads of the Pittsburgh region in the early 1850's had a profound

20 *History of Pittsburgh and Environs*, 163. *Infra*. 9.
21 Burgess, *op. cit.*, 162.
22 *Pittsburgh Daily Gazette*, January 24, 1856, 2.
23 Burgess, *op. cit.*, 104.

effect upon the development of the area. Although frail in construction and slow in movement compared to modern trains, the early commuter train was a vast improvement over existing forms of transportation. In some respects, an entirely different way of life became possible with this new instrumentality. Quoting initially a quaint verse as typical of the time, Branch goes on to note the extreme importance of the coming of the commuter train:

> Conductor, when you receive a fare,
> Punch in the presence of the passenjare!
> A blue trip slip for an eight-cent fare,
> A buff trip slip for a six-cent fare,
> A pink trip slip for a three-cent fare,
> Punch in the presence of the passenjare!

These trip slips—blue, buff, pink (and Punch)—must be catalogued among the significant documents of history. Implicit in that verse is a revolution in American life: the advent of the commuter. To the commuter are traceable the major distinctions between the modern city and its predecessor of the early nineteenth century. Each smoothing of the highway or acceleration of speed that has widened the commutation area—that has enabled merchant or workman to live three, five, sixty miles from his place of business, as time and economy may allow—is a vastly influential factor in the shaping of an urban area, commercially, residentially, culturally.[24]

References to three, six and eight-cent fares in the little poem give an idea of the prices charged for tickets on the commuter trains of the 1850's. A return-trip ticket on the Ohio and Pennsylvania Railroad between Allegheny City and New Brighton (about fifty miles round trip) was eighty-five cents in 1852. By 1855, there were five passenger trains operating daily between Allegheny City and New Brighton and thirteen commuter stops. Applications for more stops had been submitted and specifications for a double track were being drawn.[25] Season tickets for the regular commuter and package tickets for his family were made available. Picnics and week-ends in the country became popular with Pittsburghers. Sewickley, which in 1850 had been furnishing ten or twelve passengers a week to steamboats, was supplying about a hundred passengers daily to the Ohio and Pennsylvania Railroad by 1855. Branch relates: "It was the decade of the fifties that the commuter in the Pittsburgh region emerged from his chrysalis phases—from enjoying the mud-splashed luxury of a private carriage or enduring the wallowings of the omnibuses or the stages."[26]

The service offered by the Pennsylvania Railroad tended to

24 E. D. Branch, "Punch Conductor," *The Pittsburgh Record*, September, 1936, 36.
25 *History of Pittsburgh and Environs*, 163.
26 Branch, *loc. cit.*, 37.

increase both population and property values in regions adjacent to its line through East Liberty and Wilkinsburg; for example, in 1865 Sipes marvelled at the rapidly expanding rate of East Liberty and this was true of other areas as well. Many fine suburban residences were being built by Pittsburghers in suburban recesses while near the railroad station itself compactly built squares of houses were quickly claiming the beautiful open country, and the commuter train was invariably given credit for the rapid development of the eastern suburbs. By 1870, twenty-eight local trains were running daily between Wilkinsburg, East Liberty and Pittsburgh. Wilkinsburg was at that time surrounded by a rich agricultural area, with market-gardening a leading activity. Coal mining had become important near the town, also, and over three hundred men were employed in the coal industry.

The early commuter trains were small in size. The passenger cars, all of wooden construction, were about thirty-five feet long from coupler to coupler. They had open platforms and a seating capacity of about forty persons. Gas lighting was introduced in some cars in 1859. The passenger engines used by the Pennsylvania were built by Morris and were of the American type, with two pairs of drive wheels and two pairs of leading truck wheels. While the locomotives, weighing from 26,000 to 64,550 pounds, enjoyed a good reputation for speed, their light frames and boilers, however, were sources of rather serious trouble. In these early days wood was the locomotive fuel. Experiments with coal were made as early as 1853, but its general adoption did not come until after 1860.[27]

Because of the obvious importance of fuel the "wood agent" soon became an important official of the railroad. It was his duty to buy and have stored at the necessary places ample fuel for the locomotives. Wood was plentiful and cheap, and long rows of cord wood at all important stations were a prominent feature of the landscape. Instead of being numbered, the engines were named after prominent stations on the line. The *Alliance, Allegheny, Salem* and *Wellsville* were early engines used on the Ohio and Pennsylvania Railroad.[28] Accidents were common, due mainly to inexperience in operating procedure and lack of effective safety devices. The small size and frail construction of the early trains

27 Burgess, *op. cit.*, 292.
28 T. L. Rodgers, "Recollections of Early Times on the Ohio and Pennsylvania Railroad," *The Western Pennsylvania Historical Magazine*, III (January, 1920), 6.

presented grave problems. One of the early authorities, T. L. Rodgers, declared that: "One great menace to safety in traveling was the number of animals straying on the tracks. Frequently the engine would plow its way into a drove of sheep; in that case it was bad for the sheep, but when a horse or cow was struck, it was very often bad for the train." [29]

Stopping the train was a very serious problem. Each car was equipped with a brake operated by a hand wheel. As the train approached the station, the engineer would give the signal for the brakes to be applied and the train crew would operate the brakes on each car by hand. This system limited the length of the train and the speed at which it could safely be operated.[30]

Instructions to the stationmasters and conductors, apparently rigidly enforced, give some insight into another side of train operation. Regulations stated that all old material had to be gathered up at least twice a week, and neatly piled at proper places. Briars and undergrowth were to be cleared from the right-of-way, and the station platform and the ground about the station kept clean and in good order.[31] From comments available, it seems that these early stationmasters must have taken great pride in their assignment, much as many English stationmasters do today—going so far as to plant small gardens on the station grounds and competing with other stationmasters for the honor of having the most attractive flower display. Conductors were specifically instructed to be most considerate and respectful in their dealings with the passengers in order to contribute to the travellers' pleasure and comfort. Especially to be watched, and ejected if necessary, were those passengers inclined to indulge in rudeness or profanity. Drunken or disorderly persons were not to be permitted on the train. Much of this early training in courtesy and consideration continues to manifest itself in our own hurly-burly times.[32]

Improvements in the construction of the passenger cars and in the operation of trains came rapidly after 1860. A new passenger car seating fifty persons was introduced by the Pennsylvania Railroad in 1862. Light was still provided by candles and heat by a

29 *Ibid.*, 5.
30 Burgess, *op. cit.*, 6.
31 Sipes, *op. cit.*, 261.
32 One young lady, for example, commenting on her first ride on a commuter train during the city-wide street car strike of 1955, relates what a change and pleasure it was to be treated like a lady and helped on and off the train.

stove in the center of the car. There were no sanitary facilities. Sipes, describing new cars introduced about 1870 on the Pennsylvania Railroad, emphasizes the safety aspect: "The passenger cars are constructed upon plans carefully prepared by the engineers of the company, the utmost pains being taken to make them safe, comfortable, and handsome. The body of the car is built of great strength, so that, in almost any kind of an accident, the person who is cool enough to keep his seat is sure to escape injury." [33] These cars were heated by stoves bolted to the floor, the fire doors having gratings to prevent the escape of the fire in case the car was upset.

Despite the ravages of the Civil War, four lines were constructed during the sixties and early seventies in the Pittsburgh area. Interestingly enough, all were aided financially during one or more phases of their construction by the Pennsylvania Railroad and all were eventually absorbed into the parent system. It is no slight tribute to the management of the Pennsylvania Railroad to observe parenthetically that the four lines developed rapidly into important freight and commuter routes.

The click of rolling wheels provided a delightful kind of close harmony for the investors in this quartet. Because of their dual capacity as freight and commuter agencies, it is worth mentioning a few details concerning each of these railroads. The Western Pennsylvania Railroad was built from Blairsville, where connection was made with the Pennsylvania, northwest to Freeport on the Allegheny River some forty miles north of Pittsburgh. Service began between the two terminals during July of 1865. The following year when the Pennsylvania Railroad sold to its subsidiary the old canal right-of-way between Freeport and Allegheny City,[34] the Western Pennsylvania Railroad had an ideal route for rail construction into the big industrial center. By 1866 the small railroad had in operation ninety miles between Blairsville and Allegheny City and the following year it became part of the Pennsylvania Railroad, developing rapidly into the profitable Conemaugh Division.[35] At the height of suburban train service during the first quarter of this century, many commuter trains operated over this division to Allegheny Valley points.

The second of the quartet, the Pittsburgh and Steubenville

33 Sipes, *op. cit.*, 28.
34 Burgess, *op. cit.*, 110.
35 *Ibid.*, 111.

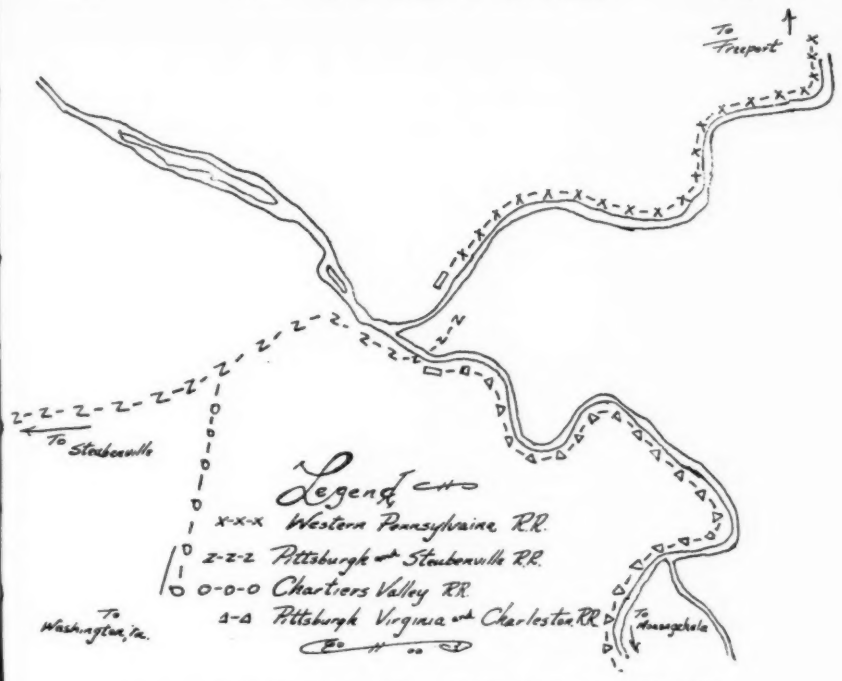

Figure 2. Railroads Constructed in the Pittsburgh Area 1860-1870.

Railroad, suffered from stormy rivalry between Virginia, which jealously sought to preserve her substantial interest in the Baltimore and Ohio Railroad, and Pennsylvania. Virginia's opposition, coupled with scarcity of capital, impeded construction until late in 1862—exactly thirteen years after the line had actually been incorporated. The secession of West Virginia from the Old Dominion settled the territorial conflict and war needs dictated the importance of a link between Pittsburgh and Steubenville. Traffic from Pittsburgh to the Ohio city opened on October 9, 1865, allowing through-train service to Columbus. In 1868 the Pennsylvania gained control of these lines through its subsidiary company, the Pittsburgh, Cincinnati, and St. Louis Railroad—more commonly known as the Panhandle Division of the Pennsylvania System.

The importance of "little Washington" as a trading town on the National Pike suggested immediately the value of rail link with

Pittsburgh; furthermore, rich bituminous coal deposits lay all along the proposed route. To tap these resources, there was incorporated in 1853 the Chartiers Valley Railroad. When surveys clearly showed that the Pittsburgh and Steubenville Railroad had the only practical route between Pittsburgh and Carnegie, it was decided to launch the Chartiers Valley line at the latter point. Service to Canonsburg opened in 1870 and to Washington in 1871. The usual development occurred when, in the following year, the railroad was leased to the Pennsylvania to become part of the Panhandle Division.[36]

The Pittsburgh, Virginia and Charleston Railroad was chartered in 1867 to reach into the rich bituminous coal lands adjacent to the Monongahela River in Washington, Westmoreland and Greene Counties. Financial difficulties plagued early construction efforts begun in 1868, and Pennsylvania interests gained control of the property the following year. The Pennsylvania Annual Report of 1871 best indicates the reasoning which prompted the acquisition of the southbound line:

> The difficulty in passing freight trains from the south branch of the Monongahela through the tunnel under Grant's Hill in Pittsburgh, and our yards adjacent to it, has been found so serious that it has been deemed advisable to continue a line at once through Birmingham (under the charter of the Pittsburgh, Virginia and Charleston Railroad Company) to a point above Turtle Creek, from whence a branch road will cross the Monongahela to the Pennsylvania Railroad upon a route of better gradients and a shorter distance than now used. The Pittsburgh, Virginia and Charleston is to be continued up the Valley of the Monongahela through a fertile and prosperous region, containing exhaustless fields of the best bituminous coal and must, in itself, prove a profitable enterprise.[37]

The road was completed from Pittsburgh's South Side to Monongahela City in 1872 and later extended to West Brownsville.

The importance of the Baltimore and Ohio Railroad to Pittsburgh dictates that the risk of repetition must be borne in order to re-emphasize the extremely crucial importance of this line as a vehicle for southbound traffic. It will be recalled that the Baltimore and Ohio, as early as 1842, had sought access to Pittsburgh—only to see their ambitions frustrated by the Pennsylvania Legislature. Thwarted in its frontal attack, the line's management seized the opportunity to acquire substantial interest in the Pittsburgh and Connellsville Railroad which left only the Connellsville-Cumberland link to be completed. At this thriving little Maryland city connec-

36 H. W. Schotter, *The Growth and Development of the Pennsylvania Railroad Company* (Philadelphia: Allen, Lane, and Scott, 1927), 99.
37 Quoted by Burgess, *op. cit.*, 119.

tions could be made with the main line of the Baltimore and Ohio Railroad. The fiercely partisan aspect of the struggle was forcefully brought out by the historian of the Baltimore and Ohio, Edward Hungerford, who described the elation of the company when the "invasion" of Pittsburgh had been successfully completed.

> Pittsburgh—then, as today, the very center and citadel of the Pennsylvania's best traffic pie—after terrific effort, both financial and constructive, was invaded. Through trains between Cumberland and Pittsburgh, over what was for a time continued as the Pittsburgh and Connellsville Railroad, but which was afterwards absorbed by the parent Baltimore and Ohio company, began in June 1871. The enemy's country had indeed been invaded successfully. No longer could the powerful Pennsylvania feel that it held an important industrial city absolutely in the hollow of its hand and free from any outside interference. While, for the Baltimore and Ohio, there finally had been gained an entrance into a city without a peer anywhere in this world for the production of freight tonnage.[38]

Of the principal railroads to enter the Pittsburgh region, the Pittsburgh and Lake Erie was the last to be constructed, and was strictly post-bellum in incorporation and execution. The idea of a railroad along the southwesterly bank of the Ohio crossing at Beaver to move toward Youngstown was conceived in 1875 by William McCreery and his companion, one Charles A. Cooper of the engineering firm of Dedburn and Cooper. McCreery and Cooper surveyed the route in the guise of hunters, presumably to prevent suspicion on the part of the Pennsylvania, whose Fort Wayne line would parallel the proposed route for more than half the distance. Actual construction began in 1877 with substantial support from Pittsburgh interests; while there is evidence to suggest that Pennsylvania Railroad interests viewed the project with skepticism, the line proved to be an immediate success. From its beginning in 1879 it made more money per mile than any other railroad in America.[39] In 1884, the Pittsburgh and Lake Erie Railroad leased a line (the Pittsburgh, McKeesport and Youghiogheny) which had been completed the previous year from the South Side of Pittsburgh to Connellsville. The addition enabled the Pittsburgh and Lake Erie to provide a direct connection between the Connellsville coke-making region and the Youngstown steel district.[40]

Things did not go smoothly all the time as the great railroad

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38 Edward Hungerford, *The Story of the Baltimore and Ohio Railroad* (New York: G. P. Putnam's Sons, 1928), 106.

39 Cowan, *loc. cit.*, 122.

40 *Railroads of the Pittsburgh District* (Report No. 5, Citizens Committee on City Plan of Pittsburgh, October, 1923), 51.

riots at Pittsburgh in 1877 testify. Continued layoffs and wage reductions in the railroad industry during a period of depression and industrial strife, led to a strike at the Pennsylvania yard outside Union Depot the morning of July 19, 1877. When local militia proved incapable of controlling the worsening situation, the Governor of the state ordered a division of the state guard from Philadelphia to Pittsburgh. The guardsmen arrived on the scene in the afternoon of July 21. Shortly after five o'clock, the guards fired upon an angry mob near the Twenty-eighth Street roundhouse. This action served as the spark which touched off the terrible riot and burning spree. The infuriated crowd, having secured guns of their own, drove the badly outnumbered guardsmen into the nearby roundhouse and tried to set the building on fire. In the meantime, others ran wildly about, setting fire to railway cars and buildings.

The editor of the *Commercial Gazette* related that the mob resorted to violent incendiarism, which beggared adequate description, and which, "in point of malicious and wanton destruction of property," had never been equalled in the United States or perhaps in any other civilized country.[41] The burnt-over area extended all the way from Thirty-second Street to the Union Station. Hundreds of freight and passenger cars were destroyed, as well as some 125 locomotives. Buildings totally destroyed included two roundhouses, car shops, machine shop, a large lumber yard, a large grain elevator, and the Union Station itself. Estimates of the damage ran as high as ten million dollars. The strike stopped all traffic on the Fort Wayne, the Panhandle and the Allegheny Valley divisions, in addition to the main line. More than ten days elapsed before normal traffic could resume. In spite of such temporary set-backs the railroads soon came to dominate freight movement in the Pittsburgh region bringing the full benefits of efficient, speedy transportation to the Western Pennsylvania community.

ACKNOWLEDGMENT

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41 *Pittsburgh Commercial Gazette*, July 23, 1877, I.

A REVOLUTIONARY JOURNAL AND ORDERLY BOOK OF GENERAL LACHLAN McINTOSH'S EXPEDITION, 1778

Edited by EDWARD G. WILLIAMS

THIRD INSTALLMENT

ROBERT MCCREADY'S ORDERLY BOOK (CONTINUED)

Brigade orders Oct^{r} 30th 1778

the Q^{r} M^{rs} of each Batalion of ye militia is to see the Batalion is furnishd with axes tomahacks Roops [ropes] for lashing the Comp^{ys} tents ——— ye officers Comanding Batalions to have their men Compleat with amenition the men of each Batalion who are to be left & be formd into a Comp^{y} —— And the proportion of officers for the men left to Comand them which officers is to See their men properly taken care off So as to have their proportion of tents & kettels allowing those to march tents Sufficient for seven men to a tent as those who Stay can make Camps the Q^{r} M^{rs} is to have a fotigue to have all the Axes ground

Detail of ye Guard

	C	S	Pr
Gu^{d}	1	—	31
Fotigue	—	—	10

Head Q^{rs} 2^{d} of Oct^{or} 1778

[November 2 is meant. These same orders are stated in Guthrie's Orderly Book of the 8th Pennsylvania for that date.][20]

Field Officer of The day Col^{o} Gibson

1200 of the Activest and Choisest men Out of the whole Line Are to be Ready to march at an hours Warning with their Arms An[d] A Coutrements Each having A bayonet Or Tommyhawk And 40 Rounds Of Amunition in the Best Order with 2 Spair Flints And Also their Cloths Blankets and Kettles And Every Necessary for Encamping

Col^{o} Cambary [Cambray] Commissarys And Q^{r} M^{rs} will Aply To the General for what they are to provide. At the Special

Request of Col° Broadhead: Capt Joseph Finly[21] is to Act as his Brigade Major in the Absence of Major Grayham M[r] Arch[d] Steel[20] is Apointed Ensign in the Eight Pennsy[l] Reg[t] Doctor Skull is appoint.d Surgeon of the Militia from this Side the Mountans And Docter Gay Surgeon of the Militia on the Other Side who Are to Consult when Necesary with the Docters Morgan & Brown All of whom Are to be Respected Acordinly[22]

As M[r] Haymaker will be otherways Employd M[r] King[23] is to Superintend All the work here to Require [th]at all Fatigue And workman Shall Go to their Meals Or Rest Only at A Certain Beat of the drum as he Shall Direct And Return to their work again upon Beating the pioneers March which is to Be Observd for the futer On the Penalty of One Days pay Lieu[t] Col° Campblle[24] is to have the Command of this and All posts On the Other side the River untill further Orders he is to have the Direction of and use his outmost Endavours to Colect asuficent Quantity of furrage Provision and other Stores here as Soon as possible And Give Orders for that purpose to the different Departments of the Staff.

A General Court Martial whereof Major Vernom[25] is president to Sit this Morning at 8 oclock for the Trial of Capt M Cormick[26] of the 13[th] Virginia Reg[t] Now under An Areast And Such other prisoners as may be Brought Before them

M[r] Jas Berrwick to Act as Judge Advocate During Col° Bentons Absance from Head Q[rs] Major Harrison[27] of the Yohageny Reg[t] is Ordred to Asist the Q[r] M[r] Gen[l] in procuring furrage

M[r] Rob[t] M[c]Cready is

Apointed Adjutant of Col° Stephensons Reg[t] During this present Expedition

BO Fort M'Intosh Nov[r] 2[nd] 1778

The Officers Commanding Batalions in The Virginia Militia Are to make Returns For Amunition To Compleat these Batalions Imeadiatly Taking Notice what they have So As to Compleat The Companies A Greeable To A former Order With what they have On hand. A Return of the men in Each Batalion Who Are to be left at Fort M'Intosh To be made Out Imeadiatly with Names And their Companies they Belong to ————

Each Batalion to Leave an Officer To take Charge of the men who

Are Left The Baggage To be All Ready for Loading their is no Excuse will be Taken for Neglect ————
All who have No Bayonet mus[t] Draw a Tommyhawk ————

GO Fort M'Intosh Nov^{r} 4th 1778

Order Of March

1st 250 Rank and file To march in front in Three Collums From Col^{o} Broadheads Brigade who Are To furnish proper Advance Guards

2nd 250 D^{o} To march in Indian file. Or One Collumn upon the Right of the Road

3^{ly} 250 D^{o} To march in the same manner On the left of the Road the 2 last to be Called the Right and left wing And the Cattle Baggage And Provisions Always to march between the two Last

4th 250 D^{o} to march in the Rear And to furnish proper Rear Guards

5th The 4 Light Infantry Companys to march as Follows, Viz

6th Capt Ferrels[28] Company to Act as a reserve
Capt Moors[29] Company to be Equaly divided upon the flanks of the Advance party or 250 men in front.
Capt Sulivins[30] Company in the same Manner On the flanks of the 250 men in Rear The 2 Other Companies flank the 2 Wings

7th The 5 light Dragoons we have under the Command of Capt Mills[31] To Acct Only As the General Shall Direct.

8th The fatigue Detach.d from the line who Are to act as Pionneers along with Capt Steel[32] are to Be under The Direction of Col^{o} Cambary.[33] The Manner of the Encampment the Order of Battle And Other Necessary Movements shall Be Given Out in futur Orders which with This is to be particualry Observd By Every officer and Soldier in the Line ————

Every Officer On the Line to have A copy of the above Orders ————

Camp Pleasant N^{o} 3 Nov^{r} 7th 1778[34]

Field Officers Col^{o} Evins and Major Scott[35]

The Generall finds the Polite Manner in which he Endeavourd to Couch his Orders at [of] the 27th Oct^{r} Proves Inefectual Therefore

Any person that Fires A Gun hereafter On any pretence whatever without live [leave] from the Commander in Chief unless at an Enemy Shall forfit One mans pay besides any Other punishment that Shall be Judgd By a Court Martial. And All Officers Commanding Divisons Or parties Are to be Accountable for for (*sic*) their men. which the Commander[s] of Brigades is Strickly to Enquire into. The Generall Court Martial whereof Colº Harrison is president from Colº Crawfords Brigade To sit this morning for the Trial of Lieut Evins[36] and Others for Breach of Orders. And Alarming the Camp Repetidly The Order of Encampment which has been Repeetedly mentioned to the Officers since we Begun to march is an Exact Square As Nearly as Possible at Right Angles Each Side of which Are to have their men drawn up in One Rank And Fire Each Three yards apart from one Another And All faceing Outwards. the Company of Light Infantry To place themselves in the same Manner Diagonly some Distance from and Oposite to Each Angle And have One Third of there men as A Guard to their Own Front Respectively As well the fore lines as the Infantry which the Field officer of the Day Are to see Done And to prevent any plea of Ignorance Each Commanding Officer in the Army Are to have A Coppy of this Order. the whole Line hereafter are to have their Arms in their hands in their Tents One hour Before day. And parade at or Before Relivee [reveille] Beating to have the Role Calld and their Arms and A Coutrements Carefully Examind. which is Also to be Done in the Evening when they Encamp

The field Officers of the Day Are to be Apointed in the morning And see the Execution of All Orders and hurry the Pack horses and Bullock Drivers, with Every Department of the Staff who have Detaind the

The Army so Long hitherto and Report Every Ocourrent [occurrence] Through the Day and Night to the General

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Head Quarters [Camp] Nº 4 Nov. 8

Colº Beeler & Colº Harrison Officers of the Day

A General Court Martial whereof Colº Harrison is President of The Militia line.

Head Qurs N 4th Novr 8th 1778

Colº Beeler And Colº Harrison Officers Of the Day

A General Court Martial held of the Militia line this Day whereof Col° Harrison is President. Lieut Evins And Nicholas Low Joseph Bull And Jn° Caskascus Soldiers All of Col° Morrows Reg^t were Tried For Disobedience of Orders And Alarming the Camp Repetedly by fireing Guns. To which they all plead Guilty But say they were Ignorant of the Orders. The Court were of Opinion the Prisoners were Guilty of Breaking the fifth Article of the 2n^d Section And 9^th Article of the 13^th Section of the Articles Of War. And yet Only Sentencd them to be Repremanded. Which the General Cannot upon Any Principle of Reasoning Bring himself to Aprove Of But Rather thinks the Gentlemen Of the Court most Reprehencible. whos[e] Duty As Officers it is at all Times To make themselves And All under Their Command A Quainted with Every Necessary Order And Every part of their Duty. But if the horrid Barbarity And Murder Committed And Which lay before their Eyes at the Time Does not Avail . Nothing Else Can the Court is Disolv^d and Low Bull and Casekascus may Go to there Duty for this Time. But Lieu^t Evins must Remain under Areast as the General Cannot trust with the Saifty of his whole Army in the heart of an Enemys Country and when we All know Ourselves to be Sarounded By them To so Careless an Officer ————

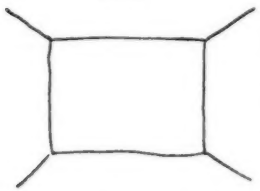
Head Quarters Nov^r 9^th 1778 Camp N° 6^th

Field Officers Col° Gibson[17] and Col° Stinson [Stephenson]

The Cruel Masacree of Lieut Parks[18] And A Soldier of the 13^th Virginia Rege^t By their Going Out of the Line Ahunting Yesterday Contrary to Orders the Reports made to the General from every Quarter Convinses that the Enemy are Continualy watching us And Doging us On all sides for Straglers who may Imprudently Expose themselves which must sue [shew] Every Officer the Necessity of stri[c]t Desepling [discipline] And Obedience to Orders. And that each take the Greatest Care hereafter that none Of their men under his Command shall Strole Or Go out of their lines to prevent mistakes in Orders that has so Often been Given Verbaly it is Repeted in this manner that if A party of the Enemy Presumes to Insult us. Or that A single Shot is fired in the front or rear of Our Army During Our march the Advance or rear Guards Shall Instantly rush upon them Or where such Shot was heard. And the light Infantry from the flanks with the same Seelarity [celerity] Are to Endeavour to saround them & in like Caus[e] upon the flanks

the light Infantry Covering them Are to Act in the same manner Observing Always to send One party Directly forward as well as to flank the Army without Intrupting the march of the Army. But if the Enemy shall appear to be in force And the Attack more Serious The whole Army Are Imedeatly to halt. And put themselves in Order of Battle as Quick as possible which is Only for the front and Rear Divisions To form themselves in One Rank and Fyre as in the Order of Encampment Given the Seventh Instant. the Two flanks to face Outwards and march in that manner untill the Angles Are form.d And they Compleat the Square. the light Infantry pleasing themselves in One Rank and Fire Pointing Directly from each of the Angles thus

Thus



Ready to flank the Enemy where ever they Attack while the Cattle & pack horse Drivers Are as Quick as possible to Colect the Stock together in as small a Compass As possible as Quick As they Can in the Center. in this position the whole are to remain And Wait the Order that may Be Given them As Circumstance Requires to the officer Commanding Any of the Two Division[s] Each line is divided into. Except the side that is Attackted. who Are to rush upon the Enemy without Any Delay And the light Infantry upon its flanks to Saround them All these and other Maneuvers A Gainst Indians are to be perform.d with the Out most Dispatch. And Always Runing to be Able to Cope w^{t} so Active An Enemy and So Dexterous At surprise in all there salis [sallies]—The General Requests And Expects Of every Officer that they will Consider And Diges[t] this Order well As Ignorance Cannot be Admited as A plea for the Neglect of it an[d] that they Also Charge there men never to fire at Random nor Untill they See A Good Object A fa[u]lt too Common And they Are Very Apt to be Guilty of therefore the more Necessary to be Inculcated frequently And Guarded A Gainst As it is layable to Numberless inconvenniences. ———

Paroal Georgeia Countersign Genevia

Head Quarters Nover 11th [Camp] N^{o} 7. Officers Of the Day Col^{o} Morrow and Major Vernon. Since the weather will not alow the Army to march this Day And food All Eat out within the lines

One half of the Pickets Are to Guard the Drivers Wherever they Carry there Cattle And horses where the Best food Can be Got the rest of the picket Are to Guard the lines untill reliev.d in the Evening as Usual ———— for the Good Behavior of the men in there Strict Obedience to Orders, which the General Saw himself A remarkable Instance of yesterday when the deer ran through the lines and for which he Publickly returns them his thanks he alows An Officer and Twelve men from Each line to hunt Dureing this Day for the Benefit of the whole, Observing that the men of each party for to keep within Sight of Each Other and Report every Discovery they make Of the Indians ————

Paroal Houstoun Counter Sign Honour ————
officer of the day Col° Harrison & Major Scott
Head Quarters Nov^r 12 1778

The General Could wish After the Indulgence of Yesterday, that All the Officers who Commanded hunting parties had reported whether they had made Any Discoveries Or not, A Greeable to Orders The Center Collumn of the Front and Rear Divisions Are to march in Double files hereafter to Give more Room to the Cattle and Baggage horses And Form the Readyer when Requirrd which last the Adjutant General is Ordred to Direct And see performd properly. And with Expedition On all Occasions By Every line Alternatly Beginning with the Front As the General is Ever Anxious for the honour as well as Safety of An Army of such Brave men, has Observ.d them for want of Information To form their lines Very Acwardly and Slow which is attend with many Inconveniences Especialy A Gainst Such enterprising An[d] Vigelant Enemies as Indians are. who take every Advantage and Attack with Savage furry, — The field Officers of the Day Shall send Parties Before day to way lay the Road as Col° Broadhead shall Direct. while the Army marches And Also see all the light Infantry Scout properly as Already Directed for some Distance Around the Camp on all sides for Sculking parties Of the Enemy to Bring in all the Straglin horses And Cattle as early as possible and Report to the General when all things are Ready And prepared for marching. All firing is Strictly forbid for the future unless at an Enemy

A Briggade Order Nov^r 14^th^
A Court Martial to sit this morning at 8 OClock At Col° Beelers

Tent for the Trial of A prisoner Confind by Capt Ferrel for Shoting whereof Col° Beeler is president

Head Quarters [Camp] N° 9 Saturday Nov^r 14^th^ 1778
Parole Monongehala
C.Sign Minden

At a Breggade Court Martial from The Militia line held this day whereof — Maj^r^ Henderson[39] Was President Jacob Orange of Colonel Morrows Regiment was tried for firing his Gun contrary to orders to which charge he plead Guilty and the Court Sentenced him to recive fifteen lashes well laid on his bare back with hickory switches . Thomas Cantwell of Colonel Evans's Regiment tried by the same court for firing his Gun when he was on Guard. but being proved to be an accident by the evidence of John Manby is ordered only to be repremanded for his carelessness the General highly approves the Sentences of the Court on those too men & thanks the Gentlemen for the attention and desire they Have shown to brake the vile practice of Shooting which besides the waste of amunition where we cannot get supplied is extremely dangerous in our present Situation.

For once more the General pardons Jacob Orange the whipping in hopes he will behave well hereafter only to forfeit one Months pay agreeable to the Order of the 7^th^ Instant.

The Deleware messengers are come to Camp and inform the General their Warriors will join our Army at or perhaps this side Tusquerawes therefore no party are to go any distance ahead of the Army until further orders or without leave and every person are to be exceeding cautious to distinguish well whether any Indians they meet are friends or enemies before they fire upon them A White flag with fifteen Red stripes[40] is given the Forerunner for distinction at the same time every precaution is Necessary and to be used against treachery no man or party of Men must be suffered to come in or go out of Camp without the Generals approbation

The Picquet to be Relieved this Evening.

Head Quarters [Camp] N° 10 16^th^ November 1778
Parole Orangeburgh C:Sign Oliver

Every person without Exception is positively forbid to Buy Or sell Or have Any kind Of Barter Or Dealing whatsoever with An Indian Or Indians. without the Generals Special leave in Writing

And any Officer Soldier Or Other person who Buys A single Article Or Articles hereafter if ever so trifeling Contrary to this Order Shall forefit such Article with whatever he Give for it. And Three months pay Besides Such Other punishment as a Court Martial shall inflict for Breach of Orders. And every person Privie to such purchase Who does not inform AGainst the offender Shall forefit One months pay besides Other punishment And One half of the Value of Any Article or Articles so purchased of the Indians Shall belong to the informer This Order is to be read repetedly Before Every Company in the Army And to the Staff that no person plead Ignorance

Officers of the Day Coll° Morrow and
Major Scott

Brigade Orders Camp N 11th Novr. 17th 1778
No person to pass the Militia line without leave in writing from the Commanding Officer of the Brigade and all that may happen to be Already Out to be taken as prisoners in their Return to Camp And report made to the Commanding officer by the Officers of the Several Guards Respectively as must Expect to Account for their Neglects and if any Gun is fired Near the lines the Officers of the Guards most Convenient Are to send A file of men to Aprehend Any person that may be found in the Breach of Orders. which none Can plead Ignorance

Head Quarters Camp N° 11 Novem 17th 1778
Parole Poland C.Sign Prudence ————
Field Officers of the Day—Col° Harrison And Major Scott ———

Head Quarters Camp N 11th Novr 18th 1778
Field Officers of the Day Col° Evins and Major Springer
The General is informd that some Enemy Indians have Been seen near Our Camp. therefore Cautions All Officers
Be Verey Carefull that none of their men Stragle or Go Out side of their lines by Night or Day unless they are Ordred upon some Duty and Call there Roles Often as the Repeted [orders] issued Against firing Guns wantonly is Shamefuly Neglected . Any Soldier who Detacks [detects] Another Shooting A Gun hereafter without leave Shall upon Conviction of the Offender Intitled to One months pay Extraordanry And Any who Shall not Detackt or inform A

Gainst any Such Ofender Or Ofenders shall be Confin.d as Guilty of the Crime himself And forefit One Months pay And Such other punishment as A Court Martial may Inflict ———— Or if any Officer Commanding a party next where A shot is heard Does not Immeiadly rush unto the place AGreeable to the Order of the 9th Ist To see if it is an Enemy he Shall be put under an Areast for Breach Of Orders.———— This the Field officers of The Day are to see inforced in there Respective Departments. And also that The Centinels have No fires At Night. all Officers and Soldiers Are desired to Colect and save all the Deers Tails they Can Get and wear them in their hats which may Induce our friend Indians to do the same & Distinguish Ourselves and them from Our Enemies. A return of Powder Horns wanted in each Regiment to be made out this morning ————

Head Quarters Camp N 12 19th Novr
Officer of the Day Colo Beeler

Head Quarters Camp No 12 Novr 20 1778
Field Officer of the Day to morrow Colo Stephenson ————

Head Quarters Camp No 12 November 21st 1778
Field Officer of the Day Colo Morrow ————

A General Court Martial whereof Major Vernon is Apointed president for the Trial of Capt Cook[41] of the Eight Pennsylvania Regt and Willm Eliot[42] Director Or Superintendant of Pack horses And such Other Prisoners As may be Brought Before them.

As the weather Begins Already to Set in Very Severe And we have Experienced the pack horses to be Exceeding Sorry which will make Our Suplies Uncertain the General is Sorry he is Obligd To Curtail the Rations to One pound Of flour per man pr Day untill A suply Arives here. And hopes the Brave men of his Army will Content themselves with it for A short Time And see the Necessity and Propriety of, to make up for the Dificency Each man is to be Serv.d with 1-1/2 lb of Beef per Day which the Commisary must Strictly Observe Untill farther Orders—

After Orders ————

As the General is Anxious to have the Fort Finished and Try if we Can Do any thing AGainst the Enemy this Season he Desires Each Regt to take there Share Of it in proportion to there number of men off Duty Imeadatly as the pickets are Now Cut and he hopes

they will Exert themselves to Shew who will be Done first ————

B O Head Quarters Nov^{r} 23^{d} 1778
A fatigue to be got Ready by 8 of the Clock to Morrow morning of One third of the whole Militia to set up Pickets —— then Each Company of the Different Batalions of Militia Are to bring in Pickets A Greeable to A Detail which will be Given Or Delivered A Greable to the proportion of the Several Companys.

W^{m} Crawfor^{d}

An Officer from each Company is to Attend and see the Above Duty Performd And make A report to me Of the same ————

Head Quarters Camp No 12 November 24 1778

Field Officer of the day Major Scott

General Orders A General Court Martial held Yesterday whereof Major Tailor was president. Capt Tho^{s} Cook of the Eight pennsy^{l} Regiment was Tried for Neglect of duty and Sleeping On Guard At Camp Beaver———— The Court were Unanimously Of Opionion that Capt Cook was not Guilty Of the Charge———— William Eliot (Elliott) A superintendant Or A director of pack horses for this division tried by the same Court for Neglect of duty the Court were of the Opinion Every Blame of the delay of Our Army Ought to have faln upon Braidy And Eliot Should be Discharged. the General in Compliance with there Opinion relases both these Gentlemen And Disolves the Court but at the Same time As the States have Sufred so Amazin[g]ly Already in this department And Every Expedition and plan hitherto set On foot has fallen through By the Neglect of those Employ.d on it which is well known to every person in this Army. the General Expects more from the Directors of it in future. And desires Such Careless persons as M^{r} Eliot will not be Employ.d hereafter as he finds laying the Blame Upon any others will be deem.d a suficient Excuse And no Examples Can be made Of such delinquents and plunderers of the publick ————

Head Quarters Tuscara[w]is Nov^{r} 25th 1778
B. O. A Brigade Court Martial to Sit this Morning at 10 O'clock at Coll^{o} Evins Markee whereof Major Springer is presid^{t} for the trial of all the Prisoners that may be Brought before them

Head Quarters Tuscarauis Nov^{r} 25th 1778

G O Field Officer of the Day To Morrow Major Springer —— Tuscarauis Nov^{r} 25th 1778 ————

General Orders The General is so well Satisfied with Capt Priters [Prather's][43] Conduct Yesterday And his Vigilance in Detacting those who who (*sic*) so Shamfuly waste there Amunition. And is Attended with so many Inconveniences And he (Capt Preter) has liberty to hunt with any three men he Chooses provided it is Out of hearing of the Piquets. and that he Always inform the Gen^{l} of it and takes up Any Others he finds without Leave in writing.———

Officer of the Day Coll^{o} Beeler

All the Field officers And Capt^{s} of the whole Line Are Desir.d to Attend this morning at the Generals Markee at 10 OClock

B O Tuscarauis Nov^{r} 26th 1778

Fort Lawrance. At Brigade Court Martial whereof Coll^{o} Evins was President. Reubin Elibit A soldier in Cap^{t} Wigganses[44] Company. was Tried for Thieft And Aquited. The Commander Of the Brigade Aproves of the Sentance And Orders said Elibit to Return to his Duty.————

Head Quarters Fort Lawrance November 29th 1778

Field Officer Of the Day Major Vernon———— The Militia have behaved so well this two days past that they are allowed this day to rest themselves from any Fatigue Duty and to send four Men from each Regiment every day to hunt deer for the Benefit of their respective Corps under the direction of Captain Prator as he was the first who put a stop to the unmilitary practice of wasting ammunition and firing guns wantonly those who work at or near the Fort for the future are to lodge their Arms in the Bastions & a Guard of a Subaltern one Serjeant one Corporal and 18 Privates to mount there every morning for the Protection of them, the provisions & & & & ————

As we cannot be too Wary of the artful enemy we have to deal with, notwithstanding their chiefs are expected to come in it is hoped the Field Officers of the Day always see the whole line up with their Arms in their hands an hour before day and see them in good Order with their Accoutrements & the Rolls called at day light. & that the Centinels & Picquets be always Vigilant & Elert agreeable to former Orders. As the General observes by cutting the Timber that the Lines are mostly in the Clearing whereby the

enemy have a great Advantage the Adjutant General is ordered to Visit them often with the Field Officers of the Day and make such Alterations as they find Necessary, & no person is to go out or to come in hereafter without leave ————

Tuskarawas Head Quarters Novr 30th 1778
Officer of the day Tomorrow Colo Harrison
Capt Abram Linkhorn[45] is appointed Deputy Commissary of hides Waste [West] of the Mountains from this Day and all other Commissaries Butchers Or Others who have had any Concern with Any Publick hides leather Or Shoes heretofore in this Department are to render him An Account of there proceedings and the present State of the Business whenever Capt Linkhorn Demands it ———

Head Quarters Fort Lawrance Der 1st 1778
officer of the day to morrow Major Scott
as all the field officers and Capts of the whole Army or a majority of them AGreed that no person S[h]ould Go home untill the Indian Treaty should be over this Fort Compleatly Finished and in Good Order ———— and four Good Blockhouses Built on the Road Between this and Fort M'Intosh. the General AGreed to these Conditions and promises that none Shall be Detaind longer then they are Complied with that they may be all upon a footing at the Same time he thanks the Spirited Officers who Engaged the men for A longer time and in which they Could Expect to be of some Service to there Country The General himself proposeth Going with the Militia to Fort M'Intosh in Order to See them paid off For their Services And Expects every man will appear their To be Mustred for that purpose without which they Cannot Receive any. And Orders no person to Go out side of the lines without his permision. Except 4 hunters from each Regt By Capt Prethors live and under his Direction and for this the field officers of the day and other officers is to be Accountable ————
The officers Commanding each Regt and Company are to be Accountable for All the Amunition there men Recd at Fort M'Intosh as it will be wanting at this place
Parole— De Estang. C. Sign Egypt ————

Head Quarters Fort Lawrance Decr 3d 1778

Paroal Jererd C. Sign Green
The General assures the Militia that if they Exert themselves and will finish the Two Sides Rows of Cabins laid out for them. by monday night with what they have Already Begun they Shall have but One Block-house upon the Road to fort M'Intosh where they are to remember they most all Appear To be mustred before they Can be paid off: upon their Engagin this Colº Crawford [is permitted to discharge] Such of the Mutineers of Ohio County who laid Such Bad Examples To the whole army whose Conduct he Can Depend upon For the future and will be Accountable for. Field officer of the Day To morrow Colº Evins ————

B O At a Brigade Court Martial held at Fort Lawrance the 3d of December 1778 ———— ———— whereof Major Scott was president Capt Archd Wiggans of Colº Harrisons Regt was Tried for being absent from his Guard And Suffering About one half of his men to be Absent at the Same Time. The Court Although Capt Wiggans did absent himself Are of Opinion he did not know it was his duty to Send to be Relived and left his Guard thinking it was Sufficient To leave his Subaltern. they are therefor of Opinion he is Excusable. in leaving his Guard for So Small a distance and Time ———— And are farther of Opinion he is not Guilty of the other part of the Charge ———— Jas hinton a soldier in Colº Morrows Regt was Tried for Insolence to Ensign Hight[46] of the Same Regt And Sentenced To ask Mr Hights pardon To Morrow morning at the head of the Regt Joseph Harper & Hepkin Renkin of Colº Morrows Regt Were Tried for Shooting on the lines. the Court are of opinion that their is no proff aGainst hepkin Renkin and that there is a Greater probability that Renkin did not fire then that he did The Court are of Opinion the prisoners Ought to be aquited The Colº Commandant aproves the foregoing Sentences and orders Capt Wiggans to be discharged from his Areast ———— The Sentance of Jas hinton to take place this evening at Roll Call. Joseph harper and hepkin Renkin to be Relas.d and return to there duty ———— ———— ————

	C	Subs	S	P	
Detail	1	2	4	55	————

Head Quarters Fort Lawrance Decr 5th 1778
Officer of the day To morrow Colº Stephenson

A General Court martial from Col° Broadheads Brigade whereof Major Vernon is president To Sit this morning for the Trial of Serj[t] Jn° Aspie of the light Dragoons For dealing with the Indians Contrary to Orders and Such Other prisoners as may be Brought Before them ———— Also A General Court Martial from Col° Crawfords Brigade whereof Col° morrow is apointed president for the Trial of Some who are Guilty of the Same Offence So predjudicial to the whole Army and all our Concerns with the Indians among which delinquents The General is Sorry to find One who is honoured with the Command of A Company Shewing the Shamefull Example that is Capt pearce of Col° Stephensons Regiment all Officers and Soldiers in the line are to be Served with A Gill of whisky each and the General is Sorry horses Could not be procur.d to bring more of that Necessary Article. they who Came up with the whisky are not to have any as Two keggs are missing To make every One more Carefull in future of what they have in Charge

Head Quarters Fort Lawrance Dec[r] 8
officer of the day To day Major Springer
officer of the day Tomorrow Col° Beeler
at a General Court Martial of the Militia line held the Sixth & 7th Instant whereof Lieu[t] Col° morrow was president Cap[t] Isaac pearce of Col° Stephonsons Regt was Tried for dealing with the Indians Contrary to apositive general order to which Cap[t] Pearce pleads Guilty and Confesseth he give an Indian a Shirt and Three Dollars for two Deer Skins which he atempted not only to Justify But uplauded himself for as well as any other person who would in the Same manner Openly open and Disobey Orders given for the Regulation and Saftey of the Army Unless he or such persons approved of them Or rather if they did not Suit there own Intrested Vicious and Selfish Inclinations. with Some Iliberal and fals aspertions On the General. The Court taking the Case of Capt pearce into Consideration Sentence him Only to make A proper Aknowledgement of his fault To the General in presence of the president of the Court. and to be then Reprimanded for his Breach of General Orders, as the General knows and has a high Opinion of some Gentlemen of this Court is Extremely Sorry his duty Obledges him to disaprov[e] of the Sentence of the Court and Continues Capt pearce under Areast. as Such Examples Especaly

with Impunity would be attended with the worst of Consequences hereafter & the more as he apears to have so many Advocates which Sullies the Generals good Conduct of Militia So much aproved of and auplauded almost on every Occasion Since they have been in the Service[47] & at another Court martial from the Continental line whereof Major Vernon was president Serj^{t} Jn^{o} Aspie of the light dragoons was tried for the same Crime. that is dealing with the Indians Contrary to a positive General Order to which he pleads Guilty and Confesseth he Give an Indian the Buttons off his Coat for two Fawn Skins . the Court Sentenced him to be redused to a private Sentinel and receive Twenty lashes on his Bare Back but Recomends him to the Generals Clemencey ——— on Acc^{t} of his Former good Conduct the General highly aproves the Sentence but at the request of officers who have Shewn Such Regard for the Esentials of the Service they are Engaged in Omits the whipping. although we feal the Efects of Such bad Examples Already: Serj^{t} M'Cormick of Capt Ferrals Company is also discharg.d and the Court disolv.d ——— all the Troops are to be Serv.d with Two days more Flour Except Col^{o} Gibsons Reg^{t} who Remains in the fort[48] and prepare Imeiadately to march without any Stope or delay untill they reach Fort M'INtosh all persons are alowd to go out and in without passes To day to hunt there horses

Paroal Madrid C. Sign Minorca

[Concluded]

EXPLANATORY NOTES

20 McCready really had a bad day this day, as he made two very obvious errors that were a matter of record. Probably everything went wrong that day. Here he has dated his orders October 2, when November 2 was meant. A comparison with Ensign Guthrie's Orderly Book of the 8th Pennsylvania Regiment shows the same orders for the 2nd of November. The sequence would have suggested that solution. Two sets of orders are given for this date; one general orders and the other regimental orders. Kellogg, *Frontier Advance*, 439.

The second mistake is the insertion of the name of Archibald Steel, who was then a Colonel and Deputy Quartermaster General in the Western Department when the name of Archibald Reed was meant. Here again, a comparison with the Orderly Book of the 8th Pennsylvania shows this to be the correct reading. McCready simply made a slip of the pen.

Archibald Reed (or Read) had been Paymaster and Clothier prior to this time, which was considered a volunteer's job, like a civilian on military assignment. He was, by this day's orders, appointed an ensign in the line of officers. On December 13, 1778, he succeeded to a first lieutenancy. Archibald Reed died in Allegheny County, Pennsylvania, in 1823.

21 Joseph L. Finley was born in 1748 in Lancaster County, Pennsylvania. When the Revolution began, he was a student at Nassau Hall, Princeton, preparing for the ministry. He was commissioned Second Lieutenant in Captain Andrew

Long's Company of Colonel Samuel Miles' Pennsylvania Rifle Regiment, April 6, 1776. The regiment was so badly broken up at the battle of Long Island that it was reorganized as the State Regiment of Foot, and Finley became First Lieutenant, October 24, 1776, promoted Captain, October 20, 1777. This regiment was combined with the 13th Regiment and Finley was transferred to the 8th Pennsylvania, July 1, 1778. In this capacity he participated in McIntosh's expedition and Brodhead's expeditions. Heitman says he became Brigade Major July 20, 1780; but we have just seen, by McCready's Orderly Book, that he was so appointed to act on October 2, 1778. After transferring to the 2nd Regiment, July 17, 1781, and to the 1st Pennsylvania, January 1, 1783, he served till June 3, 1783.

After the war Finley was appointed U. S. Surveyor for Westmoreland County, where he continued to live till 1808, when he was appointed president of a small college in Kentucky. The last years of his life he spent in West Union, Adams County, Ohio, where he died May 9, 1839. The *Pennsylvania Archives* data on his age would seem erroneous, as much of the above information came from letters of his son in the Draper MSS. 5E 20-21. L. P. Kellogg, *Frontier Retreat on the Upper Ohio*, Madison, Wis. (1917), 109n3 (hereinafter noted as Kellogg, *Frontier Retreat*); *Heitman*, 226-227; *Penna. Archives*, 5th ser., II, 434-446; *Ibid.*, 520-522.

22 Nicholas Scull was a member of the prominent and numerous family of traders, surveyors and mapmakers. Nicholas, Jr., had five brothers, all said to have been surveyors, and himself Surveyor General of Pennsylvania (1748-1761). *PMH&B*, LIX, 275-278. This Nicholas must have been a grandson of the Surveyor General, since the latter had been born in 1700, and William, a contemporary of this Nicholas, stated that he was a grandson of the Surveyor General. *Ibid.*, 278. Having learned some of the techniques of dressing wounds, etc., he could have qualified as a surgeon's mate, which is how *Heitman*, 487, records him (1778-1779) in the Hospital Department. Also see Lt. Col. Duncan, *Medical Men of the Revolution, Army Medical Bulletin* 25, Carlisle, Pa. (1931), 408; J. M. Toner, M.D., *The Medical Men of the Revolution*, Philadelphia (1876), 118. Both of the above hereinafter cited as *Duncan* and *Toner*. Both latter sources list him as Surgeon.

Dr. Samuel Gay was of a Virginia family and was surgeon's mate of the 12th Virginia Regiment from February to October, 1777. After that, he was a surgeon in the Hospital Department and not attached to any regiment, 1778-1781. *Heitman*, 245; *Duncan*, 394; *Toner*, 121; *Gwathmey*, 301.

Dr. Abel Morgan was a Pennsylvanian who became the Surgeon of the "Old Eleventh" Pennsylvania, February 14, 1778. The "Old Eleventh" was raised mainly in Cumberland County. He transferred to the 8th Regiment on July 1, 1778, resigned in February, 1779, and died in 1785. See *Pennsylvania Archives*, 5th ser., III, 317, 591, 610; *Heitman*, 401; *Duncan*, 403; *Toner*, 124.

Dr. Joseph Brown was at this time Surgeon of the 13th Virginia Regiment. *Gwathmey*, 101 (from MSS in the War Department). He is probably the same Dr. Joseph Brown who was Surgeon's Mate in the 7th Pennsylvania and Surgeon in the 13th Pennsylvania, Jan. 1777-July 1, 1778, and could have gone with the 13th Virginia Regiment, which was recruited in Western Pennsylvania, by September or October of the same year. After the war he practiced medicine in New York City, was a member of the New York Chapter of the Cincinnati, and died in 1835. *Pennsylvania Archives*, 5th ser., III, 209; *Heitman*, 126; *Duncan*, 386; *Toner*, 118; *Gwathmey*, 101.

23 Hugh King, with a company of carpenters and sawyers, came from Philadelphia. See letter of Col. George Morgan to King: Kellogg, *Frontier Advance*, 108-110. Jacob Haymaker was also a boatbuilder. He was appointed a Justice of the Peace on the day of organization of Yohogania County. See "Minutes of the Court of Yohogania County," *ACM*, II, 78, 224. From 1783 to 1788, he rented John Ormsby's boatyard and "carried on the boatbuilding business . . . with great success," *Pittsburgh Gazette*, Apr. 19, 1788, *WPHM*, XXIII, 217. These two men were brought along to supervise the building of the two forts.

24 Richard Campbell was a native of Frederick County, Virginia, and was com-

missioned Captain in the 8th Virginia, Feb. 19, 1776; Promoted Major in the 13th Virginia, Aug. 10, 1777; Lieutenant Colonel, Feb. 20, 1778; Transferred to the 4th Virginia, Feb. 12, 1781, and sent south with General Greene, wounded at Camden, April 25, 1781; killed at Eutaw Springs, Sept. 8, 1781, where he led with great bravery, the Continentals in a charge. It was here that Col. William Washington was wounded and captured, a day of great loss to the cause. *Heitman*, 142; William Gordon, D.D., *History of the Rise, Progress, and Establishment of the Independence of the United States*, London (1788), IV, 171; Charles Stedman, *History of the American War*, II, 168. Colonel Campbell was left in command of Fort McIntosh and all of the smaller forts when McIntosh marched for the Muskingum. He relieved Fort Laurens in the summer of 1779 and remained there until its abandonment in August of that year. Kellogg, *Frontier Advance*, 59, 364.

25 Frederick Vernon was a native of Delaware County, then part of Chester, of which his father was sheriff at the start of the Revolution. The father and brother of Frederick were among the most notorious Loyalists, his brother having joined the British troops. Kellogg, *Frontier Advance*, 139; W. H. Siebert, *The Loyalists of Pennsylvania*, Columbus, Ohio (1905), 44, 80, 57, 59; Lorenzo Sabine, *The American Loyalists*, Boston (1847), 667. *Heitman* thus summarizes Frederick Vernon's service: Captain, Col. Anthony Wayne's 4th Penna. Battalion, Jan. 5, 1776; Captain, 5th Penna. Regiment, Jan. 1777, to rank from Jan. 5, 1776; Major, 8th Penna. Regiment, June 7, 1777; Transferred to 4th Penna., Jan. 17, 1781; Transferred to 1st Penna., Jan. 1, 1783 to close of war; Brevet Lieutenant Colonel, Sept. 30, 1783. *Frontier Advance* adds that Vernon entered the merchant marine to the West Indies and died at sea about 1795 or 1796. *Pennsylvania Archives*, however, give date of his death as 1807; 2nd ser. II, 334; 5th ser. II, 699.

26 George McCormick was an Ensign in the Virginia service, in a Ranging Company, during Pontiac's War in 1764, according to records of the "Minutes of the Court of Yohogania County." *ACM*, II, 400. The orders for November 4th are not given by McCready, but they are given in the orderly book of the 8th Pennsylvania. Kellogg, *Frontier Advance*, 440-441. The accusation was disobedience of orders and being absent from his command. The court of officers found him guilty with loss of pay, but the General disagreed and gave Captain McCormick leave to resign.

An interesting bit of information turned up in the court records. Ibid., p. 299 (November 25, 1778): ". . . a commission appointing said George McCormick sheriff, was issued some Time Ago, but the said McCormick was then an Officer in the Continental Service, and Contrary to his Expectation the General would not at that Time suffer him to resign, and consequently could not serve, but since has been permitted to resign and is now clear of the Army, and now assures the Court that he will Except of the Office and have the Duty Done.

"George McCormick Gent, is appointed Sheriff for one month. Entered into Bond, Sworn."

He died January 30, 1820. *Heitman*, 366.

27 William Harrison was born in Virginia and moved to the vicinity of present Connellsville, when very young, with his father's (Lawrence Harrison) family. He was a brother of Captain Benjamin of the 13th Virginia. He studied law, served in the Virginia House of Delegates, and was sheriff of Yohogania County. He was a son-in-law to Col. William Crawford, having married his daughter, Sarah. In McIntosh's expedition, he was a Major. He was with the ill-fated Crawford expedition and shared the terrible fate of Crawford at the hands of the Indians at Sandusky. Kellogg, *Frontier Advance*, 165-166. James Veech, *The Monongahela of Old*, 118-120.

28 Thomas Ferrell was an Irishman who had arrived in this country only shortly before the Revolution. He commanded an independent company of rangers, under the Virginia government, from the neighborhood of Fort Pitt. Part of the time he was at Fort Henry (Wheeling) and part of the time at Fort Pitt. Kellogg, *Frontier Advance*, 197.

29 This was probably Captain Thomas Moore, as Kellogg, in the index to *Frontier*

Advance so indicates, supported by material in the Draper Collection at the Wisconsin Historical Society. Moore was First Lieutenant in the 13th Virginia, Nov. 16, 1776; Captain, Jan. 23, 1778; served to January, 1780. Died 1829. *Heitman*, 400; Gwathmey adds that he was awarded 4,000 acres.

30 James Sullivan was active around Fort Dunmore in 1775, as on February 22 of that year, he was sworn as a viewer of the road from Fort Dunmore to Becket's Fort (in now Washington County), was with General Hand as a captain of militia. See "Records of Virginia Courts at Fort Dunmore," Boyd Crumrine, *Annals of Carnegie Museum*, I (1902), 527, 538, 551, 560.

General Hand sent Sullivan with 52 regulars to protect the harvesters in Westmoreland County during the summer of 1778. M. C. Darlington, *Fort Pitt*, 233.

Heitman, 527, gives his record: Captain in the 13th Virginia, December 16, 1776; retired September 30, 1778. He then took command of a company of militia.

31 This was Captain Benjamin Mills of the North Carolina Light Dragoons. (See note 17 above.) Evidently only five of them were now left of the fourteen who had remained at Fort Pitt.

Captain Mills' military record is thus given: First Lieutenant, 8th North Carolina Regt., Nov. 28, 1776; resigned, July 12, 1777. (It is recorded in the *Journals of Continental Congress*, June 27, 1778, as a recommendation of the Board of War to Congress, that Benjamin Mills, Lieutenant in the First Troop, be granted a commission in the Corps of North Carolina Light Dragoons, to date from July 16, 1777.) *Heitman*, 394, says he served to January, 1781. *Virginia Magazine of History and Biography*, XXIV, 179n.

32 David Steel was a deputy sheriff for the District of West Augusta, at Fort Dunmore, having taken the oath of office August 20, 1776. See "Minutes of the Court Held at Fort Dunmore." *ACM*, I, 565. *Frontier Forts of Pennsylvania*, II, 432, shows him with Colonel Gabriel Cox and the Virginia Militia at Fort Cox in (now) Washington County in 1776. He was commissioned Captain in the 13th Virginia Regiment, Dec. 16, 1776, and retired Sept. 30, 1778. *Heitman*, 517; Gwathmey gives exactly the same information as the foregoing, but adds that he received 4,000 acres. Both of these authorities state that Captain Steel died Feb. 4, 1819. *Virginia Magazine of History and Biography* shows him as receiving a pension in 1840, living in Augusta County. *Heitman*, however, purports to have been compiled from the pension records in the Archives.

33 The Chevalier de Cambray-Digny, Colonel in command of the artillery in the Western Department and Engineer Officer. See Introduction, *WPHM*, XLIII, 5.

34 The orders for the period from the 7th to the 11th are missing from Ensign Guthrie's orderly book of the 8th Pennsylvania so that the orders here given are the only known record extant, along with McCready's journal, of this part of the expedition.

35 Major Scott is identified as of Berkeley County in the list of prospective witnesses for the Court of Inquiry which McIntosh requested of Washington. Kellogg, *Frontier Advance*, 330. Gwathmey, *Historical Register of Virginians in the Revolution*, 695, identifies him as Major George Scott of the Berkeley County Militia. *Heitman*, 485, gives his record thus: Second Lieutenant, (Hugh) Stephenson's Virginia Rifle Company, July to December, 1775; Captain, Virginia Militia, 1777-1778.

36 This was almost certainly Lieutenant John Evans, as all others of the name, listed in Gwathmey, *Historical Register of Virginians in the Revolution*, are accounted for, either as of different rank or at a different place at the time. *Gwathmey* states of him, simply: "At Pitts[burgh]." The "Minutes of the Court held at Fort Dunmore," *ACM*, I, 565-566, included his name on a list of "proper persons to be added to the Commission of the Peace." On the petition for forming Allegheny County, in 1788, his name appears. *WPHM*, IV, 92.

37 John Gibson was born in Lancaster, Pennsylvania, May 23, 1740, the son of George Gibson, Sr., a well known and respected tavern owner, and brother

of Colonel George Gibson, also of the Virginia Line. His mother was the highly educated daughter of a French count (Huguenot). Her sons and grandsons received much of their classical education from her, especially in French and Spanish. The two sons later had opportunity to use their linguistic knowledge. T. P. Roberts, *Memoir of John Bannister Gibson*, Pittsburgh (1890), 12-13. About 1770, the Gibsons moved to Silver Spring in the Cumberland Valley, where the father established a mill.

At the age of 18, John's first military experience was with the army of General Forbes to the Forks of the Ohio, and he remained to enter the Indian trade. When Pontiac's Indians struck, John, with two men in his employ, were captured at the mouth of the Beaver. The two men were tortured and burned; but Gibson was adopted by a squaw to replace a son who had been killed, and thus was saved. His linguistic ability aided him in quickly mastering the Indians' language and learning their customs.

It is mentioned by C. W. Butterfield's *Washington-Irvine Correspondence*, vii-xi, that John Gibson was one of those captives released by Bouquet at the end of 1764. A search of the lists of names in the Gage Papers in the William L. Clements Library, however, did not yield the name of Gibson. The author personally has searched the lists inclosed with covering letters in the Gage Papers. These lists were published by Dr. William S. Ewing in *WPHM*, XXXIX, 187-203, but John Gibson's name was not included. Dr. Ewing, however, has since found an additional list of 15 names printed in *New York Mercury*, for Monday, January 21, 1765, no. 691; and John Gibson's name there appears. See Williams, "The Orderly Book of Henry Bouquet, 1764," *WPHM*, XLII, 298 n 63.

For the next few years Gibson continued in the trading business and built a house opposite Logstown, where he acquired land in the "Indian cornfields." It was here that the Rev. David McClure visited him and reported his having a "temporary" Indian wife. *Diary of Rev. David McClure*, F. B. Dexter, ed., New York (1899), 15ff; Hanna, *Wilderness Trail*, I, 380. It is here stated that this Indian woman was the sister of Chief Logan's wife and that both were killed by the whites, thus precipitating the outbreak known as Dunmore's War in 1774. Gibson acted an important role in negotiating peace. It was he who received the celebrated oration of Logan and so eloquently translated it, so that it has remained a classic of the English language.

Gibson participated in the treaty at Fort Pitt and undertook a tour of the Western tribes in the interest of peace, after which he went into the army, as Lieutenant Colonel of the 6th Virginia Regiment, November 12, 1776. After being engaged at Trenton, Princeton, Brandywine and Germantown, and spending the winter at Valley Forge, he was ordered to Fort Pitt to take command of the 13th Virginia. He marched to the Tuscarawas with McIntosh and remained in command of the "Forlorn hope" of 150 men (plus officers) to garrison Fort Laurens during the terrible winter. Kellogg, *Frontier Advance*, 186, 197, 409. He served in Broadhead's campaigns and was left in command at Fort Pitt, when that officer was recalled. Biographers have generally overlooked the fact that Col. Gibson was in Virginia with Lafayette in 1781 for a short while. *WPHM*, III, 31.

After the war Gibson was made a Judge of Common Pleas in Pittsburgh, was a member of the Constitutional Convention in 1790, and was appointed Major General of Militia of Pennsylvania. He was on the side of law and order during the Whisky Insurrection. In 1800, President Jefferson appointed him Secretary of the Territory of Indiana, which office he held until Indiana became a State, in 1816. He died at the home of his son-in-law, George Wallace, at Braddock's Field (now North Braddock, Pa.), and was buried in Pittsburgh. Biographical sketches may be found in C. W. Butterfield, *Washington-Irvine Correspondence*, Madison, Wis. (1882), 349; C. W. Butterfield, Washington-Crawford Letters, Cincinnati (1877), 69; T. P. Roberts, *Memoir of John Bannister Gibson*, Pittsburgh (1890), 219.

38 Lieutenant James Parks, whose identity and death are described in "Robert McCready's Journal" and note 7, *WPHM*, XLIII, 12.

39 James Henderson was a younger brother to Colonel John Henderson, who was in the Continental Army and had married the sister of General Andrew Lewis's wife. James did militia duty at frontier forts and rose to the rank of Lieutenant Colonel of the Greenbriar militia, 1777-1780. He was also Paymaster of the Greenbriar militia, 1778-1783. Gwathmey, *Historical Register of Virginians in the Revolution*, 368; Thwaites and Kellogg, *Frontier Defense*, 80 n48.

James Henderson was the proprietor of large grants of land which his father left to him on the Greenbriar. For many years he was a respected and leading citizen and Colonel of the Greenbriar County militia. *West Virginia Historical Magazine*, V, 110.

40 It is interesting to speculate on McIntosh's reason for having fifteen red stripes. This would total 29 alternate red and white stripes. We may well be surprised that, with all the supplies necessary to obtain, pack, and transport, they should have planned for such an exigency. No precedent for fifteen stripes can be found in any of the literature relating to the flags of the Revolution. F. E. Schermerhorn, *The American and French Flags of the Revolution*, Philadelphia (1948).

41 Thomas Cook took the oath of Captain in the Militia, May 26, 1776. "Minutes of the court of Yohogania County," *ACM*, III (1903), 85. The military record of Thomas Cook thenceforward, according to *Heitman*, 169, stands thus: 1st Lieutenant, 8th Pennsylvania, Aug. 9, 1776; Captain, July 26, 1777; retired as supernumerary, Jan. 31, 1779. He died in Guernsey County, not far from Cambridge, Ohio, November 5, 1831. *Pennsylvania Archives*, 5th ser., III, 314.

42 William Elliott was a partizan of Pennsylvania in the jurisdictional disputes between that colony and Virginia. At the first term of the Virginia Court at Pittsburgh, he was committed to jail ("goal") until he paid a bond of £100 to keep the peace and refrain from taking an account of individuals' property for the purpose of taxation on the part of Pennsylvania. "Minutes of the Court at Fort Dunmore." *ACM*, I, 526. On May 20, 1775, Robert Elliott conveyed to William Elliott 900 acres on the "Old Forbes Road," 12 miles from Pittsburgh, adjacent to land of Ephriam Douglas. *Ibid.*, 301, 302. His name appears several times in the Account Book of Casper Reel at Pittsburgh in 1775, for dressing deer skins and making breeches. *WPHS*, MS. He also appears on the tax lists of Pitt Township, Westmoreland County, for 1772. Veech, *Monongahela of Old*, 199.

43 Basil Prather was commissioned 1st Lieutenant in the 8th Pennsylvania Regiment, Aug. 9th (or 11th), 1776; was promoted Captain Lieutenant sometime prior to June 9, 1777, when a return listed him in command of a company. A return dated Nov. 1, 1777, shows him "on command with Col. Morgan, from June 9." About a hundred riflemen from the 8th were sent to form part of the picked rifle corps at Saratoga in the summer of 1777. (See note 14 on Captain Swearingen.) After this campaign under McIntosh, Prather resigned, March 31, 1779. *Pennsylvania Archives*, 5th ser., III, 307, 323, 333; *Heitman*, 450. He paid taxes in Westmoreland County in 1783, and in the newly formed Fayette County in 1786.

44 No record can be found in any of the Virginia writings or records of Captain Wiggans (or Wiggins). He is later (in the Orderly Book) identified as Archibald Wiggans or Wiggins of Col. Morrow's Militia Regiment of Rockingham (then Augusta) County.

45 The spelling here used: Abraham Linkhorn, compares with Abraham Lincoln in Ensign Guthrie's Orderly Book, as, indeed, it should be. Kellogg, *Frontier Advance*, 448. Captain Abraham Lincoln was the son of John Lincoln who had migrated with his family to the Shenandoah Valley (Linville Creek, in Rockingham County) from Berks County, in Pennsylvania, just prior to June, 1768, when he purchased 600 acres of land. This John had been born in Monmouth County, New Jersey, the son of Mordecai, who, in turn, had come from Hingham, in Massachusetts. It is interesting to note that Hingham was also the place of origin of General Benjamin Lincoln of Revolutionary fame. J. H. Harrison, *The Settlers by the Long Gray Trail*, Dayton, Va. (1935), 136.

Captain Abraham Lincoln commanded one of the several companies of Rockingham militia forming part of the four battalions of Augusta County, soon to be divided up (1776-1777). They fought against the Cherokee Indians in 1776, and joined the McIntosh expedition at Fort Pitt in 1778, thence marched to the Muskingum. C. E. Kemper, *Virginia Magazine of History and Biography*, XXX, 399-400.

About 1780, after the birth of his son Thomas, Captain Lincoln moved his family to Kentucky. There (in 1786 to 1788; authorities differ on the year) he was killed by the Indians while working in his field. Thomas, left fatherless at a very early age, grew up on the frontier farm, married his cousin, Nancy Hanks, and the great President Abraham Lincoln was born, named for his grandfather, who marched in McIntosh's army. J. H. Harrison, ***The Settlers by the Long Gray Trail,*** 283-285; ***PMH&B,*** XXIV, 131, 132 genealogical table). Modern authorities seem to agree that Captain Lincoln's wife was not Mary Shipley, but was Bethsheba Herring.

46 This was, likely, William Hite. There were many of the name in the Virginia regiments; but, if they held commissions, they were of higher rank than an ensignsy in 1778, or were in regiments of the Continental Line. Ensign William Hite had been in the 8th Virginia from August, 1777, to July, 1778, but retired in time that he could have joined Colonel Morrow's Berkeley County Militia Regiment in the fall of 1778. Gwathmey, *Historical Register of Virginians in the Revolution*, 380; *Heitman*, 292, same information as *Gwathmey*.

47 This trial, defense, and verdict of the court of officers all give a picture of the feeling of the militiamen in relation to the growing unpopularity of General McIntosh which finally led to his recall. Open hostility, even mutiny of the Ohio County Militia, and Broadhead's letter to Washington, Jan. 16, 1779. Kellogg, *Frontier Advance* (from the Washington Papers), 200.

48 See note 37, above, for Gibson's heroic command of the little garrison of 150 enlisted men and officers, totalling 172, during the terrible winter at Fort Laurens. Kellogg, *Frontier Advance*, 186, 189, 409.

BOOK REVIEWS

Origin of the American Revolution: 1759-1766. By BERNARD KNOLLENBERG. (New York: The Macmillan Company, 1960. Pp. 486. $8.50.)

Historians familiar with Bernard Knollenberg's work have long awaited the publication of this book, and they have not been disappointed. Careful, meticulous scholarship has produced an important work. After a masterfully condensed introduction in which he states his case, the author begins his narrative by relating the colonies to the realities of British politics, preparing the reader for the events to follow. It is the author's thesis that, "while the British Stamp Act . . . contributed to and touched off the colonial uprising of 1765-1766, the colonists had been brought to the brink of rebellion by a number of other provocative British measures from 1759 to 1764, most of which persisted after the Stamp Act was repealed in 1766 and contributed to the mounting colonial discontent culminating in the American Revolution" (page 1). After stating his position, Mr. Knollenberg leads his reader with a firm hand through the development of colonial grievances. He begins with imperial efforts to give the governor's instructions a force superior to law and to eradicate self-government in the colonies. The effects of this action were seen in Virginia in the Twopenny Act dispute, in Massachusetts in the disagreement concerning the Writs of Assistance, and in difficulties over the Electoral Law in South Carolina. Similar efforts to bring the colonies under closer supervision were evident in New York and New Jersey in efforts to reduce the tenure of supreme count justices from "good behavior" to "the pleasure of the crown." The activities of Thomas Seeker, Archbishop of Canterbury, designed to impose the Anglican Church and introduce an American bishop among dissenting colonists were evident causes for distrust of England in many quarters. Furthermore the favorable aspects of the settlement of the French and Indian War were soon overcome as colonists became aware that imperial authorities sought to enforce a whole series of acts restricting colonial trade in the interests of British Mercantilism while a military establishment remained in America not for the protection of the West but to keep the colonies submissive. Add to this the bungling and the failure of Amherst and the army which resulted in the Indian uprising

centering in western Virginia, New York, and Pennsylvania. Additional grievances were found in an unrealistic enforcement of the White Pine Acts and the Sugar Acts. Upon this scene of discontent and unrest came the Stamp Act upon which the colonists could focus all their mounting objections to their position within the empire.

In recounting this story, Mr. Knollenberg has marshalled new evidence along with old, and in the process he has laid to rest some persistent old myths. Generally his position is in reaction to the empire oriented historians who, beginning with George Louis Beer, sought to counteract patriotic claims that all British actions were evil. Now, in this most recent work, the emphasis is once again on the colonists who were suffering under British action, and on the blunders which came from London.

The work is masterfully documented, and not the least of its scholarly accomplishments is in the numerous appendices which clarify confusing problems and also establish some important historical points.

Colorado State University CARLOS R. ALLEN, JR.

Man of Reason: The Life of Thomas Paine. By ALFRED OWEN ALDRIDGE. (Philadelphia: J. B. Lippincott Company, 1959. Pp. 348. $6.00.)

This excellent and scholarly biography of Thomas Paine by Alfred Owen Aldridge, presently a professor of English at the University of Maryland, reminds the reader (if he needs reminding) that the American Revolution involved more than a political severance by the colonies from England but was a truly social and ideological conflict as well. As much as any other leader of the rebellious temper of the American colonies in the mid 1770's and in a dramatic manner of life and expression which was uniquely his own, Paine represents the ideological spearhead of the American revolt against her colonial ties and goes on to fill in the negative of separation from the old with the positive of a new society consonant with his understanding of the principles of 18th century rationalism and liberalism.

Paine was wholly a self-made man and rose from depths of social obscurity which no other important leader of the American

Revolution can really match. The fact that he was born in such lowliness and grew, with much financial and occupational difficulty, to his maturity, not in the freer atmosphere and the more openly mobile society of the Thirteen Colonies, but in an England where the rigidities of place and title still dominated the social scene, no doubt gave to his revolutionary pen, when finally he came to write, its special point. Certainly he adequately embodied throughout his life the left-wing of the American Revolution and the degree of his rebellious momentum continued to be sufficient, in his declining years, to carry him well into the swelling tide of the French Revolution, even if also under the shadow of its guillotine when the extravagances of factual change finally outran the milder images of theory.

The author of this biography presents Paine as a conveyor and a missionary for ideas rather than as a personality. And, indeed, the essential nature of Paine's contribution and importance to history is wholly ideological. Paine held no office of importance in England, America, or in France; he manipulated no human destinies save through the impact of his writings. He would appear even purposely to have sought, through a general evasiveness and the lack of very intimate ties with other human beings, the obscurity as a man and individual which was his natural heritage by birth. To be sure, it would be an interesting effort to attempt to bring Paine the man out of his self-sought corners and fairly to present a well-lighted portrait of him—one thinks of Edmund Wilson's brilliant achievements in this as in other regards in his *To the Finland Station*, where the leaders of revolutionary thought in the 19th century are reproduced for modernity in their living wholeness. Mr. Aldridge shows no flare for such portraiture, and his book is academic in the duller sense partly as a consequence. Yet one is grateful to him for not trying and then bungling the job as certain fairly recent popularizing writers on Paine have done.

There is little question that Mr. Aldridge's book is the best and most definitive treatment of Paine, his life, and his works which is available at present. It is erudite, complete, and free of obvious bias. But to say so much is still not to deny that something more stimulating and more searching may not someday be written about this fascinating 18th century "man of reason" who chose to involve himself as an active partisan in two sanguinary and passion-ridden wars. Perhaps the man may be made to appear more alive and three-dimensional by some later biographer or, more importantly,

the intricate interweaving of his ideas with the whole body of ideas of his age may be more clearly traced. Thomas Paine is no small topic; he is an intimate of too much of the history of his time to be small or to be dismissed by a book or two. With such a topic creative scholarship is never truly finished.

Chatham College KATHERINE GEORGE

My Unwelcome Guests. By FREDERICK S. BALDI, M.D. (Philadelphia: J. P. Lippincott Company, 1959. Pp. 222. $3.95.)

This is a summary report and record of forty years as a prison administrator and as a Medical Director of Philadelphia's Holmesburg and Moyamensing prisons, and as a Warden of Rockview State Penitentiary of Pennsylvania. During this time he had the custody and medical care of nearly 750,000 men and women. This book condenses this long experience into a number of rather definite conclusions, which often do not agree with current or popular ideas about crime, criminals and methods of treatment and custodial care.

Dr. Baldi feels that there is a gap between the theoretical aims of prisons and the practical procedures both with regard to rehabilitation and punishment. The average prisoner thinks of his sentence as malicious persecution. The only ones affected constructively are those who have a realization of having done wrong, "the rest we can only hurt." On the other hand, "prison—is the only way we have of keeping troublemakers off society's neck, for a length of time measured by the size of the nuisance he has created." The number who actually are helped by prison life is small, but it is worth the effort.

Dr. Baldi covers many controversial aspects of crime and prison life, and gives numerous typical cases to show his basis for the conclusions reached. Some of the topics covered are Prisons and Their Purposes, Some of My Guests Were Peculiar, The Stuff of Dreams, Politics and Prisons, Use and Abuse of Pardons, and many others.

This book is more than a diary of forty years in this work. It is one of the best short evaluations of criminals and prisons that has been published for some time. It bears the same relation to our problem in this field today that John Howard's *The Prison*

World of Europe did in 1854 and that of Frederik H. Wines, *Punishment and Reformation,* in 1910.

Dr. Baldi has made a real contribution to our attempts to deal with such problems as capital punishment, juvenile delinquency, mental defective offenders, administration of prisons, and the return of prison population to normal society. His material has been presented in readable style, and is a relief from the excessive use of tables of figures and attempts to reduce all to mathematical equations. The book is worthy of careful reading.

Emeritus Professor of Sociology M. C. ELMER
University of Pittsburgh

Pelts and Palisades: The Story of Fur and the Rivalry for Pelts in Early America. By NATHANIEL C. HALE. (Richmond, Va.: The Dietz Press, 1959. Pp. 219. $4.75.)

The early economic lures which drew white men to North America were gold, fish, and furs. North of Mexico, the hope of gold soon proved to be illusory. The fishing industry rapidly grew to great importance in coastal waters, but it was the fur trade which first made European ventures to the new continent profitable. The fur trade brought the white men to the land to establish trading posts and to deal with the Indians. Even after settlement began and farming provided sustenance for the colonists, the fur trade remained an important element in the economic life of various colonies down to the American Revolution, and it was among the causes of the conflict between France and Great Britain for control of North America.

This significant element in early American history is the subject of this entertaining, popularly written book by Colonel Hale, who does not aim at "a comprehensive study," but merely "to illustrate in narrative form" the effects of the fur trade on America's beginnings. He succeeds very well in carrying out his announced purpose. His story moves rapidly from topic to topic, the uses and sources of furs in the Old World, the almost fabled voyages of the Vikings who seem to have been the first to acquire furs from America, the French fur trading operations which extended up the St. Lawrence River into the interior of the continent, the early English colonies and the importance of the fur trade in their founding and

development, the Dutch and Swedish ventures in the Middle Atlantic region, and intercolonial and international rivalry in the fur trade.

After the Duke of York seized New Netherlands for the English in 1664, rivalry in the fur trade was concentrated between the English colonies and the empire of New France which spread westward to the Ohio River and the Mississippi. Western Pennsylvanians will regret that this last phase of the story, from the conquest of New Netherlands to the French and Indian War, is covered only in a rapid summary of seventeen pages. In justice to the author, he is perfectly aware of the importance of the struggle for the fur trade in the interior of the continent, but it is the earlier period with which he is chiefly concerned.

There seem to be relatively few errors of fact or interpretation, considering the scope of the narrative. It brings together countless details from printed sources and secondary works, and weaves them into an engaging and breezy story which holds attention by interesting anecdote, clever turn of phrase, and apt quotation. Although documentation is lacking, the bibliography is a good basis for further study. One might suggest the addition of Charles H. McIlwain's masterly hundred-page introduction on the early fur trade in his edition of *Wraxall's Abridgment of the Indian Affairs* (Cambridge: Harvard University Press, 1915). Colonel Hale's engaging narrative will certainly stimulate readers to seek more information about an important aspect of colonial history.

Pennsylvania Historical and Museum Commission DONALD H. KENT

The Papers of Benjamin Franklin. Edited by LEONARD W. LABAREE and WHITFIELD BELL, JR. (Volume II, January 1, 1735—December 31, 1744.) (New Haven: Yale University Press, 1960. Pp. xxvi, 471. $10.00.)

In his *Poor Richard's Almanac* for 1741 Benjamin Franklin wrote "Be always asham'd to catch thyself idle." From the material included in this second of a proposed forty volume edition of his papers, it is clear that Franklin was seldom ashamed.

The period 1735-1744, which this volume covers, sees Franklin working hard to develop his business as a printer, publisher and bookseller, and the beginning of his service as postmaster of Phila-

delphia. Though much of his correspondence for this time is missing, the letters which remain are those of a busy man—brief and to the point.

But business did not completely occupy him and in these years is seen the developing friendship with evangelist George Whitefield (who tried unsuccessfully to convert him), and the beginning of his lifelong correspondence with New York scientist and politician Cadwallader Colden, which nourished his developing interest in science. There was also time to defend Presbyterian minister John Hemphill who was accused of heresy. Hemphill was a poor writer and in Franklin's words, I "lent him my pen." And there is the appearance of one of the more famous of his numerous inventions, the Pennsylvania fireplace or Franklin stove.

All was not success for Franklin in this nine year period. In 1741 he began the publication of the *General Magazine* which lasted only six months. But this failure was only a slight setback and by 1744 he was well on his way to making himself independently wealthy.

Through all of the pages of this volume, Franklin, the down-to-earth, humorous, wise, intellectually inquisitive individual, stands out. He believed in being constantly occupied, that hard work pays off. But Franklin was no machine, as is seen in his tribute to his wife, "My Plain Country Joan," in his lending "the Stranger from Boston" a sixpence, or in his desire to help mankind as set forth in "A Proposal for Promoting Useful Knowledge."

As in the first volume of this work, the editing is of a high order. Both the general public and the scholarly community can rest assured that the publication of the papers of one of the greatest Americans is in good hands.

University of Pittsburgh EMORY G. EVANS

The Antiques Treasury of Furniture and Other Decorative Arts. Edited by ALICE WINCHESTER and the STAFF of *Antiques Magazine.* (New York: E. P. Dutton & Company, Inc., 1959.)

To open the *Antiques Treasury,* a handsomely produced quarto volume, is not only to scan the chronicle of some recently founded American museums but also to make a varied excursion into a number of the more pleasant visual aspects of our national past. Here the story of America's earlier decorative arts is told. This

lavishly be-photographed compendium of historical resurrections is of the by-now-familiar "picture book" type, which offers to the cultivated, but hurried, reader, scholarship without tears and history without boredom, all presented in a series of changing views like tableaux in a magician's crystal globe. As we turn the glossy pages, we are beguiled, perhaps bemused by such a wealth of objects demanding our attention, but we are also instructed in the lineage of these old houses, these enchanted rooms.

Our museums—or more properly, in most cases, our museum sites—are seven (could the number have a mystical significance?) and seven times are we "conjured" pleasantly to consult the past. To begin, we are informed in an introductory essay that all this material had been published in special issues of the magazine *Antiques* during the last nine years. Most of the sites are tolerably familiar to all historically-minded Americans. They are in the order of their appearance in the book, the Henry Francis du Pont Winterthur Museum at Winterthur, Delaware; Colonial Williamsburg in Virginia; Old Sturbridge Village at Sturbridge, Massachusetts; the Henry Ford Museum and Greenfield Village at Dearborn, Michigan; the New York State Historical Association at Cooperstown, New York; Old Deerfield at Deerfield, Massachusetts; and the Shelburne Museum at Shelburne, Vermont. There are informative general essays on each museum and special articles devoted to their chief holdings. At the end of the volume there is a chronological table of arts and crafts which provides a ready reference chart to supplement the illustrated material. All in all, everything is quite beautifully done up, and if the presentation is a trifle slick, it is quite sound (no one need fear shoddy scholarship since the essays are done by qualified persons). This is a book for the parlor table, but it will be no shame to the library shelf.

The book is also evidence, if any were needed, that the collecting and appreciation of American art are now activities of the largest cultural import. It was not always so. In one of the *Treasury* essays—that on the Shelburne Museum—Mrs. Electra Webb, who early began to collect our national folk art, relates a pertinent anecdote. Her mother, Mrs. H. O. Havemeyer, whose notable collection of European art is now in the Metropolitan Museum, asked her once how she, who had been "brought up with Rembrandts and Manets" could "live with such worthless American carvings." Granted that a collector of Rembrandts might take

a dim view of folk sculpture of any kind, the opinion was once commonly received that a pre-occupation with American arts and crafts was at best provincial and at worst frivolous. The number and scope of the collections displayed here show how different everything is now. Our cultural heritage has at last come into its own.

Since 1900, the collection and study of American antiques has certainly become "big time." The founding of the magazine *Antiques* in 1922 was itself a sufficient guarantee of a cultivated public devoted to connoisseurship in American art history, as was the opening of the American Wing of the Metropolitan Museum in 1924. Wealthy private collectors began to turn their interest, and their purses, from Europe: Henry Ford began to collect in this field in 1914 and Henry Francis du Pont in 1918, with the results shown so splendidly in this book.

Collections of American art have proliferated, have grown, until the old fashioned museum galleries can no longer contain them and they have spilled out over the landscape, gathering here and there into little museum colonies. Most of the museums treated here (probably influenced by their earlier counterparts in northern Europe) are of the "outdoor" type. Old Sturbridge Village, Greenfield Village and Shelburne are groups of buildings brought from various localities. Deerfield is a "preserved" 18th century hamlet, while Williamsburg is nothing less than the complete restoration of a large and important Colonial town. Winterthur with its many "period" rooms is almost as grand in conception, but it has stayed, more or less, under one roof; there is no guarantee, however, that it will not "take off" and build it "yet more stately mansions." Possibly, we of the West will waken some day to find that the museums have inherited the earth and have quite closed in on us. Worse destinies could befall us.

This is, perhaps, to dream, but it must be admitted that the *Treasury's* seven museums are most conducive to visions of the past, if not of the future. Here is the *mise en scene* of history, and we may people the stage settings according to our learning or our imagination. In our own uneasy days, when presages of the Apocalypse abound, these little "preservations" and reconstructions of the past, may offer us some solace and, possibly, a measure of hope that civilization itself can be preserved.

Pittsburgh JAMES D. VAN TRUMP

HISTORICAL SOCIETY NOTES AND DOCUMENTS

THE HISTORICAL TOUR OF 1960

C. W. W. Elkin

In 1955 the Historical Society's annual tour took the form of a boat trip up the Allegheny River to Kittanning and was considered so satisfactory that many members requested a similar trip down the Ohio River. This was planned for the summer of 1960.

On Saturday, July 16, 251 people boarded the pleasure boat *Chaperon* on the Pittsburgh side of the Allegheny River just below the Sixth Street bridge. The day was ideal for such a trip and the accommodations on the boat were most satisfying. Refreshments were available throughout the day and in the evening a delicious plate dinner was served.

Leaving the wharf about 2 p.m., the *Chaperon* proceeded smoothly down the river as far as the mouth of the Beaver River at Rochester where the return trip was begun about 6:30. On the trip down the Ohio River Captain Fred Way, an authority on river lore, lectured on the historical significance of the many interesting sites. The first of these was Brunot's Island, a name associated with the well-known Brunot family that for a time lived on the island. Here they were visited by Lafayette, a friend of Dr. Felix Brunot. At this region Chartiers Creek empties into the Ohio River. Also in this region is the McKees Rocks Bridge, the highest bridge over the Ohio. On the opposite side of the river is seen the Western Penitentiary and the Pittsburgh Screw and Bolt factory.

Mr. Christie called attention to the fact that McKees Rocks at the mouth of Chartiers Creek was known to the French as *"Ecrite Rocher"* or "the place of the rock with pictures" and that it was thought suitable for the location of the fort which Washington later located at the Point. Its importance lay in the fact that with one portage a canoe could follow a course almost due west to a point on the Ohio near Steubenville thus avoiding the great bend in the Ohio through Beaver. This would reduce by many miles the distance to the lower Ohio.

Proceeding down the river Captain Way pointed out the wall

of the former Davis Island Dam, opened in the 1880's. Neville Island, the longest island in the Ohio (4 miles), was originally called "Long Island." It was also called Montour's Island, named for the famous Indian interpreter, Andrew Montour. General William Irvine was given the island by the Penns, and later General John Neville owned it although there is no record that he ever lived here. General Isaac Craig, however, lived here, and died here in 1826.

The lock and dam opposite Emsworth is the first of 46 locks on the 970 miles of the Ohio. This lock was reached by us at 3:30 p.m. Navigation is rarely suspended on this dam and lock, the last time being during the famous flood of 1936. Before the dams were constructed it was possible for men and horses to wade the river.

On Neville Island are many industrial plants such as the Dravo Corporation, the Union Barge Line, and the old Varnish works that supplied varnish for the construction of the Panama Canal locks. Opposite the lower end of the island are seen the Coast Guard Base and Coraopolis (once called Milltown). Ahead is Lock No. 3 (Lock No. 2 was discontinued many years ago).

On both sides of the river were seen some fine old homes of pioneers in river transportation, as well as those of Mary Roberts Rinehart, and Ethelbert Nevin who lived on the east side of the river near Sewickley. The bridge over the river, connecting Sewickley and Coraopolis, was built in 1911, superseding a ferry at that point.

Captain Way called attention to the services rendered boats by the operators of the locks. Any boat that cannot be carried around the dam is entitled to free service of the lock. As boats approach, the lockmen are alerted by radio and by whistle—the latter indicating which side of the lock will be used. Lights on the shores are guideposts for the pilots, and buoys are used as additional guides in the river channels such as those at Shousetown, now Glenwillard. The river serves as a source of pleasure to the many owners and passengers of pleasure craft, and water skiing has become a popular sport.

As the boat moved smoothly down the river past Leetsdale, Ambridge and Aliquippa, Dr. Thurman pointed out the industrial plants of the American Bridge and Jones & Laughlin. He recited the important part played by the Harmony society in the eatly development of these sites from 1824 to 1915, especially at Old Economy, where 17 buildings are now being restored by the Pennsylvania Historical

Commission. As we moved farther down the river Dr. Thurman pointed to the sites of Logstown and Legionville where conferences were held by the Indians, and near where Céloron is supposed to have buried one of his plates claiming the region for the French. In turn the towns of Monaca (Phillipsburg) and Baden (land once owned by father of James G. Blaine), Logan's Cemetery (burial site of many Revolutionary and Civil War soldiers), and Crow's Island were pointed out.

After the return trip was begun at the mouth of the Beaver River, and dinner had been served, the boat travellers settled down to enjoy the music furnished by a three-piece orchestra and accordion, and to view the beautiful sights as the buildings along the shores lighted up. The passengers were unanimous in their impression that this was one of the finest trips the Historical Society had ever conducted, for which they gave Director Christie and his staff well-deserved praise and credit. (The owner and master of the *Chaperon* is Frank H. Johnston. Mr. Johnston's son Frank is pilot and his wife supervises services of many kinds.)

CHATTER DE LA TOUR

ROBERT D. CHRISTIE

The party-boat *Chaperon* on which we toured a short length of the Ohio River might truthfully be called a matron of both experience and propriety. "Experience" because she has seen the river from the bottom as well as the top and "propriety" because, in a way, she is immaculate. It should be said in explanation that her present owners acquired her after a long rest on the bottom of *la Belle Riviere*. Once a stern-wheeler, she was reconstructed without motive power. With the wheel and the pilot-house removed she acquired two observation decks at one end and, in case you did not notice, a cabin and sort of bar at the other end. The throb of engines gave place to vibrationless preparation of food. The loss of independent movement to party space was compensated for by the neat little towboat which pushes her around. Her cleanliness was not due to her sub-surface experience, but the cause may be deduced when we say that the first guests to arrive were not taken aboard

promptly because we wished to save them the embarrassment of having a mop and bucket thrust into their hands. You may have observed she was still wet behind the ears. (After all, our smokeless city does have a little something in the air—shall we say ore-dust?)

The romanticists who accompanied us to Kittanning on a previous boat trip expressed a preference for return to Pittsburgh by boat, regardless of the hour, rather than return by bus as arranged. This gave us the idea of timing this cruise to end under the night lights of the city which few historians have seen from the water. The idea seems to have met with approval.

Appeals for good weather on previous land tours had been delegated to Methodists and Catholics with good results but this one being on water was of special concern and was accordingly entrusted to Presbyterians and their influence was apparent. True they did not produce a moon but that is in another department. We had no cause for complaint.

The deck hand in the black and white shirt, whom you may have observed testing the tension of the ropes in the locks, was in reality Captain F. H. Johnston, owner of the *Chaperon*. He later appeared at the gangplank as we were leaving, wearing a handsome uniform which led this un-nautical reporter to think he was a police inspector who wished to discuss some legal matters connected with parking. Actually the man who piloted the boat was a son of the captain but we give them both credit for "safe home." You may be surprised to learn that this same deck hand told this writer that he had cooked all the chickens and all the vegetables on engines of the towboat and it was our pleasure to report that one guest had observed that they could not have been cooked better by the Park Plaza. We can now confide that one portion of roast beef cost us $1.00 more than an order of chicken. They were equally acceptable and good. We ended up 50-50 as planned and no shortage anywhere. The patience of so many hungry people in the unusual group gamble of service was gratifying and prevented a long queue which everyone hates.

The commentary on the history of the river by Captain Fred Way and Dr. Lawrence Thurman was informative and entertaining and added much to the trip. We are especially indebted to Captain Way in other respects because his knowledge of the rivers and his helpful cooperation, so graciously given, have encouraged us to

attempt both our river trips with success.

Special thanks is due the wife of Captain Johnston. She was personally responsible for every form of hand-to-mouth service. It is no mean accomplishment to serve 257 hot, tasty dinners without delay in the cramped quarters of a boat, and no one could have been more cheerfully cooperative, not only in this but in countless other ways.

Many people contribute to the success of such an undertaking and at every turn there was a spirit of friendly helpfulness. It was manifest in our summer president's extracting us from a difficult parking situation and in such matters as printing, mailing, consulting, medical service, many forms of gangplank service, and so forth. Without naming individuals we thank them all and at the same time we pay our respects to the congenial and considerate attitude of our guests, whom it was a pleasure to serve.

There is favorable talk of a trip in the same boat next year. Avoiding mills and congested locks on the Monongahela, we might go by bus to Brownsville. We would then go by boat to Morgantown and return to Brownsville the same way, then back to Pittsburgh by bus. It has many advantages as well as some problems of feasibility, timing and cost, but it is being considered.

FOOTNOTES TO WESTERN PENNSYLVANIA HISTORY

The Archives of this Society contain three documents concerning David Leech which are pertinent to the current issue of this magazine.

Who was David Leech?

Harris' Pittsburgh Business Directory for the Year 1837 lists David Leech as "Leech, Capt. David, owner of Canal Packet Line." Boucher in *A Century and a Half of Pittsburgh and Her People* says further that "In 1830 David Leech owned and conducted a line of canal boats between Blairsville and Pittsburg, the rates being:

for freight, twenty cents per hundred pounds, and two cents a mile for passengers."

With this background in mind it is easy to understand why Captain Leech petitions, as follows, for a "private basin" in the Pennsylvania Canal.

——— O ———

Petition D. Leech for a private basin

To the Board of Council for the City of Pittsburgh the petition of the undersigned representeth that having made extensive arrangement for placing a regular line of freight and packet boats on the Western Division of Pennsylvania Canal to run in connection by Portage with a line on the Eastern Division by means of which he expects to be permanently engaged in the transportation of merchandise East and West by the Canal to a large amount. It has been found necessary for this purpose as well in obedience to the law regulating the navigation of the Canal that he should have a private basin or recess of suitable capacity for about to tie up without interfering with the ordinary surface of the Canal for which purpose he proposes to excavate a basin. Say not exceeding ninety feet along the Canal on the berm side and not exceeding fifteen feet back from Said berm shore at a point between the Aqueduct and Penn Street contiguous to the Latter where he contemplates erecting a warehouse. In pursuance of this design your petitioner has made application to the board of Canal Commissioners whose concent in writing on the conditions therein setforth he here with submits and respectfully asks of your board that they will grant a concurant privilege for the purposes above indicated and your petitioner will pay cash

David Leech

Pittsburgh 25 June 1832

——— O ———

The Canal Commissioners Approve David Leech's Petition

Harrisburg May 18th 1832

Resolved that David Leech be authorized to construct a basin under the direction of the Engineer on the Western Division of the

berm side of the Canal in the city of Pittsburg on or along side of his leased property between Penn Street and the aqueduct.

Provided that Said basin shall be at least fifteen feet wide and ninety feet long so that a boat shall not occupy the premise [?] of the Canal while receiving or discharging her cargo-

And provided further that a plan of Said basin shall be submitted to the corporate authority of the city of Pittsburg and then consent thereto obtained and that a footway shall be left along side of Said basin of such width as shall be decided by the same corporate authority

Extract from the Journal of
the Board of Can Comm
Sign R. Shunk, Secy.

——— O ———

Report of the Committee Appointed by Common and Select Councils of Pittsburgh to Investigate the Petition of David Leech

The committee, after going upon the ground, and having ascertained the objects of the petitioner, and duly considered all the circumstances of the case, are of the opinion, that no public injury and no private inconvenience will result from concurring in the resolution of the Canal Commissioners and in granting the privilege to the petitioner therein conferred. Your committee, therefore, respectfully beg leave to conclude their report by offering for the consideration of councils the following Resolution—

Resolved, by Select and common councils of the city of Pittsburgh, that they concur in the resolution of the Canal Commissioners of the 18th May 1832, giving to Mr. David Leech the privilege of a basin opposite to his ware house between Penn Street and the Auqueduct—Provided that Said basin shall not exceed in width fifteen feet, nor 90 feet in length, and provided also, that in its erection it shall be made safe, and secured against danger to passengers who may have cause to pass and re-pass along that side of Canal—And further: that the Said David Leech, shall leave between his warehouse and the Said basin, a space of at least fifteen feet, for public use and the accommodation of foot and other passengers, to be kept as clear and unincumbered, as it is his duty to keep that,

which is hereby released to his own use. And provided further, that if the city authorities should hereafter deem said alteration injurious to the interest of the city, the said David Leech shall, at his own proper expense, cause the same to be placed in the manner in which it now stands.

All which is respectfully Submitted

John B. Butler
John M. Snowden
John Callaghan
John Turbett

——— O ———

The Petition was "Read & Concurred in" by Select and Common Councils December 30, 1883.

THE WESTERN PENNSYLVANIA HISTORICAL MAGAZINE will purchase certain issues of the magazine now out of stock and needed for libraries: Volume 1 numbers 1 and 4 (1918); Volume 4 number 1 (1921); Volume 7 number 4 (1924); Volume 9 number 1 (1926); Volume 40 number 4 (1957). Copies sent to the Editor, THE WESTERN PENNSYLVANIA HISTORICAL MAGAZINE, 4338 Bigelow Boulevard, Pittsburgh 13, Pennsylvania, will be paid for at the rate of $1.50 per issue. (Only a limited number of Volume 40 number 4 can be *purchased*.)